VOL. XII. OLD SERIES. PHILADELPHIA, JUNE, 1898. VOL. I. NO. 6. NEW SERIES.

PUBLISHED IN CONJUNCTION WITH
Sajous's Annual and Analytical Cyclopædia of Practical Medicine.
PRICE OF THIS JOURNAL, SEPARATE, $5.00 PER YEAR.

THE Monthly Cyclopædia OF Practical Medicine AND UNIVERSAL MEDICAL JOURNAL.

EDITED BY
CHARLES E. de M. SAJOUS, M.D.,
PHILADELPHIA.

WAR NUMBER.

LEADING ARTICLES: "Tropical Dysentery." "Tropical Diarrhœa." "Venomous Bites and Stings."

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Exchanges and editorial matter to be sent to 2043 Walnut Street, Philadelphia, Pa.
All letters concerning subscriptions, removals, advertisements, etc., to be sent to the Publishers.
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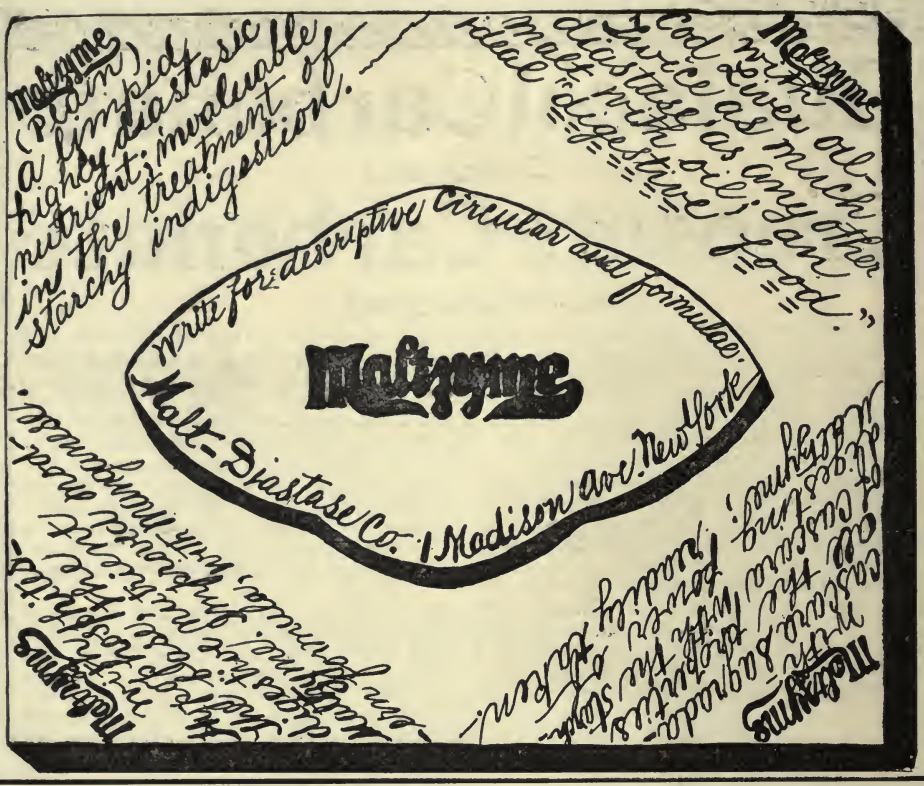

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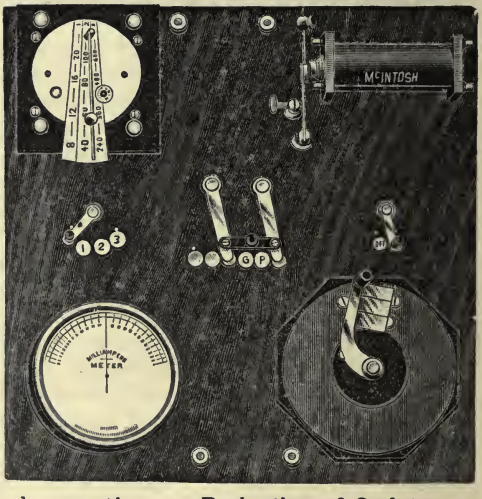

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Vol. XII. Old Series. PHILADELPHIA, JUNE, 1898. Vol. 1. No. 6. New Series.

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Introductory Notice.

In our previous issue we published a series of articles bearing upon subjects of particular interest to medical officers of the army, navy, and Marine-Hospital Service who may be sent to the front, namely: "Malaria and the Cuban Campaign," "Substitutes for the Cinchona Salts in the Treatment of Malarial Diseases," "Insolation," and "Scalds and Burns." This plan having met with considerable

appreciation, the present number contains three more such articles, namely: "Tropical Dysentery," "Tropical Diarrhœa," and "Venomous Bites and Stings"—all subjects to which our text-books give very meagre attention.

Tropical Dysentery.

Etiology.—Although several varieties of dysentery are recognized, it is thought that the endemic, or tropical, form is due to the amœba coli of Lösch. Kartulis found the parasite in 500 cases of dysentery and in all the cases of liver-abscess examined. That amœbic dysentery is a distinct type of the affection, and therefore not to be confounded with other varieties, has been emphasized by Councilman. Other authors have denied the amœba a preponderating importance in the etiology of any form of the disease. That it is only partly responsible seems confirmed by the investigations of Grasser[1] in 153 cases of true dysentery, and in which the bacillus coli and bacillus pyocyaneus seemed to play a more important rôle. The amœba coli was present in nearly half of the acute cases and in 13 out of 34 chronic cases, but there was no relation between the numbers present and the severity of the case. In the stools of perfectly-healthy individuals amœbæ were found in considerable numbers in 20 per cent. Ulceration, produced in the colon of a cat by injecting into it dysenteric fæces, was also produced by injecting sterile vegetable *débris*. This sufficiently indicates that the question is by no means settled.

Although the manifestations of tropical dysentery—diarrhœa characterized by periods of intermission and violent exacerbations, bloody stools, tendency to chronicity and to the formation of liver-abscess—resemble but slightly, if at all, those of malaria, the geographical distribution of both diseases is interesting, especially when it is recalled that both show a parasitic organism as an important etiological factor. Our Associate Editor, Dr. Simon Flexner, in an article soon to be published in Sajous's Annual and Analytical Cyclopædia of Practical Medicine (vol. ii), thus defines the marked analogy existing between the two diseases:—

"The present geographical distribution of dysenteric and diarrhœal diseases is compared by Hirsch with that of the malarial diseases, with which, in respect to the manner of their endemic prevalence, the frequency of their epidemic outbreaks, and the varying severity of their type they are in correspondence. Like the malarial diseases, they reach the maximum of diffusion and of intensity, and more especially their greatest severity as an endemic, in equatorial latitudes; in subtropical countries there begins to be noticed a decrease in the extent and seriousness of their endemic and epidemic incidence; while in still higher latitudes they almost disappear as endemic disease and show themselves merely now and then in epidemics over an area at one time larger and another time small. In one point they differ from malarial diseases, namely: that they attain to higher latitudes of the cold zone, appearing as epidemics in regions that are quite free from malaria. . . . The endemic form of dysentery

[1] Archives de Méd. Expér., Mar., '95.

has always existed in Africa and India, but the place of its natural home is not known. Its present distribution includes Africa in its entire extent, except for a few localities. Both natives and Europeans are affected. In South Africa it prevails severely in Bechuanaland, Natal, and Transvaal. In the north it appears in Egypt, especially along the coast and the Nile delta. In Asia it prevails to a great extent along the Arabian coast of the Red Sea as well as of the Gulf of Aden and the Persian Gulf. It exists in Syria, Asia Minor, and extends into Mesopotamia and Persia. Endemic dysentery is widely disseminated in India and the Indian Archipelago and exists in China. In Japan it assumes a milder form, while the epidemic variety is very destructive. The disease prevails in the tropical and subtropical parts of South America, but it fails to reach the wide diffusion which it presents in Africa and India. In Guiana it is found in the mountainous regions and in the tropical parts of Brazil in a severer form. In Valparaiso and La Serena in Chile the disease has a home. Foci appear in Paraguay and in the tropical provinces of Argentine Republic. In Peru it occurs along the marshy districts of the Amazon and in some of the mountainous regions, being endemic in the city of Cero de Pasci at an elevation of 13,000 feet. Venezuela does not escape; in Uruguay it is almost unknown. In Central America the disease prevails in Panama, Costa Rica, Nicaragua, Salvador, Honduras, and Guatemala. It is diffused over Mexico and appears at elevations of 6000 feet. *It assumes the severest forms in the West Indies, especially in Cuba and Hayti*,[2] and prevails to a greater or less extent in Guadeloupe, Martinique, and Barbadoes. In Europe endemic dysentery occurs over limited areas only and is present in the more southernly placed countries. Thus it is known in Greece, but is endemic in the Ionian islands and the Cyclades. In Turkey it is common, in Bulgaria and Roumania, along the Donau, also, while the southern provinces of Italy and Sicily are the most severely affected regions in Europe. France, Switzerland, Belgium, the Netherlands, and Great Britain are free from endemic dysentery. In Germany there are no definite foci of occurrence, but a number of cases of the disease have been observed at Weimar and Kiel. The same facts are true of Austria, which, in general, has escaped, although cases have been reported from Prāgue, Graz, and Vienna. . . . *Various telluric conditions have, from time to time, been supposed to influence the prevalence of dysentery.*[3] . . . It is a well-known fact, and one borne out by the best statistics, that both the epidemic and the endemic forms prevail especially during the hot seasons. Great diurnal variations of temperature—warm days and cold nights—have been supposed to predispose to the development of the disease; but in Egypt the facts observed are in direct opposition to this view. The degree of atmospheric moisture seems without influence: Hirsch states that, of 126 epidemics of dysentery, 65 occurred during moist weather and 61 during continued drought. The elevation and configuration of the surface seems also without particular significance, although *low-lying and marshy localities are more subject to visitations than high and dry ones.*"[4]

Prophylaxis.—In thus laying stress upon the resemblance as regards certain etiological features of tropical dysentery to tropical malarial fevers, our aim

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2, 3, and 4 The italics are ours.

is not to claim that these affections should be considered as the results of one primary pathogenic factor,—a view which for the present, at least, could easily be controverted,—but to point out that some means of prevention must be attempted for the purpose of rigidly counteracting the development of a disease which, according to Osler, "destroys more lives in the tropics than cholera, and has been more fatal to armies than powder and shot."

That the quality of drinking-water bears an important influence upon the production of the disease is emphasized by further quotation of Dr. Flexner's paper. "There is good reason to believe that the dissemination of the virus of dysentery takes place, in large part, through the water. And although the same conclusive evidence of water-infection has not been brought for this disease as has been brought for cholera, yet there are many convincing observations which bear out this belief. Numerous outbreaks, both of the endemic and epidemic varieties, among troops and inhabitants of towns, have been traced directly to contaminated drinking-water, and the replacement of the polluted by a wholesome supply has been quickly followed by a cessation in the spread of the disease. Observations which indicated a more contagious character, a transmission from person to person, are not wanting. But whether, in these instances, the virus may not have been carried by water, wash-linen, or food, is not certainly known. . . . The hygienic rules which are observed in the prevention of other infectious diseases and especially of cholera have been employed with excellent effect in controlling epidemics of dysentery. The employment of filtered and boiled water has reduced the number of cases or the spread of the disease in the tropics. The same principles are applicable to the treatment of articles of food, vegetables, fruit, etc., which come into contact with water. Other prophylactic measures consist in the use of suitable clothing, which obviates the injurious influence of rapid changes in temperature and humidity of the air, and the proper dispositions of the dejecta from the sick."

That the selection of a proper site for camping is of marked importance is shown by the reports of army-surgeons upon various epidemics which occurred in France, especially since the great colonial development of that country has made it necessary to send troops to regions such as Cochin China, where tropical dysentery is constantly met with. An epidemic which attacked the garrison of Poitiers in 1892 was found by Dr. Prieur,[5] the surgeon in charge, to be due to local unhygienic conditions. The soil was most at fault, having been impregnated by fæcal matter; the water he considered as certainly impure. A number of instances proved the contagiousness of the affection, either direct or indirect; the latter through the fæcal matter drying and being spread about in the form of dust.

In an epidemic at Toulon, reported by Bertrand,[6] there were 212 cases, several of which were in convalescents from tropical dysentery. The conditions which accompanied this outbreak were a high temperature in the last of July and August, 91.4° F., and even 95° F., and lower temperature in September and October, during which months the number of cases declined. The soil was found to contain various micro-organ-

[5] Jour. Cut. and Genito-Urin. Dis., Mar., '94.

[6] Archives de Méd. Navale, May to Nov., '88.

isms. Among the distinct causative features were exposure to the foul air of a sewer conveying fæcal matter and found to contain micrococci and bacilli; chilling of the patient, in 37 cases; excessive fatigue in others. The staphylococcus pyogenes albus or aureus were found to be constant elements in the stools of severe cases. Experiments with the cultured germ failed to produce any effect when introduced into the cæcum of a rabbit or when swallowed by a dog.

An epidemic reported by Archintre,[7] which occurred at Lunéville in July and August, 1889, had been preceded by excessive heat for two months, with sudden lowering of the temperature just before the outbreak. The main features were: exposure of the men to great heat during the manœuvres. The drinking-water had been obtained from the river, from wells, and from a spring, and was found to contain numerous bacteria. The soil in the immediate neighborhood of the barracks had been manured with dried fæcal matter; in the months preceding the epidemic excavations had been made for the construction of a new building, and it was in the barracks nearest this excavation that the first case occurred. In proof of contagion the following facts are noted: In seventeen days 25 soldiers were ill in one building, while 6 only were attacked in an adjoining building; during the sixteen days following, the cases were scattered in the two buildings, the larger number being in the one last infected. Proximity to the source of infection (the excavations) may account for this mode of development.

The influence of another factor, bad food, was illustrated by an epidemic of dysentery which occurred among 120 Polynesian emigrants on a voyage to the Fiji islands and continued after the vessel had reached quarantine. The attending surgeon, Dr. Daniel,[8] traced it to the consumption of fish, which was in a state of decomposition from the intense heat of the weather. Stomatitis with ulcers was a common complication. The mortality was unusually large: 48 per cent.

From the above, the conclusion can be reached that the soil becomes contaminated by the alvine discharges of dysenteric patients, and that, in addition to the prophylactic measures already outlined, a camp should not be located near a spot where cases of dysentery are known to have existed. Again, strict attention should be paid to the quality of the food.

Treatment.—By far the most important remedial agents employed in this disease are ipecacuanha and magnesium sulphate.

Ipecac.—In dysentery ipecac was first employed about 1650 by Piso,[9] who brought it from South America. He gave it in drachm-doses and in the form of an infusion. But it was not until Helvetius proposed it to the physician of Louis XIV, who employed it successfully in the case of the Dauphin, then dangerously ill with dysentery, that its virtues became generally acknowledged, and the drug therefore brought into general use. Marais,[10] and soon afterward Sloane,[11] Heister, Vater, and others,[12] further demonstrated its good effects.

Since that date it has been employed by the highest authorities, and during the present half-century, such Anglo-Indian practitioners as Annesley, Twi-

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[7] Archives de Méd. et de Pharm. Militaires, Aug., '90.

[8] London Pract., Nov., '90.

[9] De Med. Braz., lib. ii.

[10] Ergo Dysent. Affect. Radix Brazilien.

[11] Philosoph. Trans., No. 238.

[12] Copland's Dic. Prac. Med., vol. i.

ning, Ainslie, Geddes, Mortimer, Ballingall, Playfair, Balmair, and Ferguson[13] bear testimony as to its value and efficacy in this disease. Waring[14] personally adds that his own experience in India and Burmah fully bear out the eulogiums which have been passed upon it; and, further, that when given in doses sufficient to establish and keep up a gentle moisture on the skin, together with a slight degree of nausea, there can be but one opinion regarding it, viz.: that its operation is most beneficial. He, however, has never observed any advantage from inducing vomiting by its means in this disease; on the contrary, the greatest benefit is had when a slight degree of nausea is kept up without producing the more powerful effect. Twining[15] trusted solely to ipecac in dysentery, giving it in 6-grain doses (combined with gentian to obviate the taste) two or three times daily, though he usually preceded by venesection and a full dose of compound jalap powder (jalap, 5; cream of tartar, 10; ginger, 1 pint). Waring[16] remarks that Annesley's formula is very serviceable, and one very generally employed by Anglo-Indian practitioners,- viz.: ipecac, 1 to 2 grains; opium, $^1/_4$ grain; blue mass, 2 to 3 grains; given every four or five hours; and, when the acute stage had subsided, the blue mass was generally replaced by nitrate of silver in doses that never exceeded $1^1/_2$ grains daily. He adds that there is no form or stage of the disease in which ipecac—whether alone, added to opium, or combined with other remedies —is not beneficial, and the beneficent operation is doubtless due to its power of diminishing morbid arterial action and determining to the skin. Aitken[17] holds ipecac to be more effectual in acute than chronic dysentery, but makes it a rule to keep the patient in bed and inhibit all fluids, for at least three hours after each dose. Niemeyer[18] can conceive of no way of giving ipecac except as an emetic, and would restrict it to cases where the stomach is filled with undigested substances. Ward[19] states that ample testimony has been borne as to the value of this drug. Webster,[20] an eclectic authority, declares that it will cure dysentery unaided by anything except a favorable regimen, though it is not a rapidly-acting remedy. In malarial dysentery, says Fothergill,[21] quinine must be combined with the ipecac treatment. Pereira,[22] who thinks that the name "antidysenteric root," sometimes applied to ipecac is most appropriate, thinks its value rests in its tendency to inhibit intestinal peristaltic action of the intestines. Thompson,[23] of the Seaman's Hospital, Greenwich, after trial of many remedies, finds all inferior to ipecac, which he administers in 3- to 5-grain doses every three hours, keeping the patient rigidly supine in bed, and endeavoring, as far as possible, to maintain an equable temperature of about 62; all alcoholic or fermented beverages are strictly forbidden. Pringle[24] thought the best action was when the drug acted as a catharto-emetic, and this was likewise the view of Cleghorn.[25] Freind[26] mentions "that remarkable efficacy in

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[13] Waring's Prac. Therap.
[14] *Ibid.*
[15] Clin. Illus. Dis. of Bengal.
[16] *Op. cit.*
[17] Sci. and Prac. of Med.
[18] Text-book of Prac. Med.
[19] Med. Times and Gaz., Feb. 22, '73.
[20] Dynam. Therap.
[21] Hand-book of Treat.
[22] Mat. Med. and Therap., vol. ii.
[23] Brit. Med. Jour., Jan., '76.
[24] Diseases of the Army.
[25] Diseases of Minarca.
[26] On Fevers.

dysentery disorders which ipecacuanha challenges to itself." Cambay[27] values it chiefly after depletive measures have been employed. Stillé[28] thinks highly of ipecac, but feels assured every form of dysentery is not amenable thereto; nor is the disease benefited by every form in which the drug is administered; it is not, therefore, the dysentery panacea some enthusiasts would make it out to be. No agent appears to exert so good an effect, says Tanner,[29] for it seldom in this disease, even when given in large doses, produces nausea and vomiting, while its beneficial action upon the skin, its increase of the mucous secretion, and tendency to restore the deranged capillary circulation of the liver and intestines to normal must not be lost sight of. Goss,[30] too, speaks highly of ipecac in small doses as an active tonic to the mucous membrane of the intestinal tract, but in epidemic dysentery he would give it in milk in as large doses as the stomach will tolerate, every two hours. In acute dysentery, Farquharson[31] states that ipecac is now regarded as a never-failing specific, and adds that toleration of the drug is speedily established even if the first dose is rejected. Roth,[32] like Niemeyer and most Germans, has no good word for the drug, but ascribes all the benefit accruing during its use to some conjoined drug. Woodhull[33] brings forward very strong evidence of its value, not alone in dysentery, but in choleraic diarrhœa. H. C. Wood[34] considers that its best effects are seen in bilious and malignant dysentery, such as obtain in tropical climates, and that it is less available in the sthenic inflammatory form. Surgeon Major Harris[35] and others have treated dysentery with ipecac that had been deprived of its emetine with excellent results; but, *per contra*, Surgeon Captain Walsh[36] contends that the real value of the remedy resides in the alkaloid, whicl, however, he employed in connection with the deutoiodide of mercury: manifestly an unfair test. Kanthack and Caddy[37] both uphold Harris and colleagues, and note that de-emetinized ipecac causes neither nausea nor depression.

Dosage plays a considerable part in the application of the drug with many practitioners. Whitla,[38] while he believes ipecac to be a "specific" in dysentery, insists that it should be given in 1- to 3-scruple doses, because the stomach seldom rejects these doses; absolute rest is enjoined and liquids are but sparingly allowed. This is in accord with the opinion of Docker,[39] with whom large dosage was not original, however, though he again rendered such popular. The method was extensively tried in the Madras Presidency, according to Cornish,[40] and of 53 cases thus treated by him but 1 died: to enable the stomach to bear these doses, both he and Docker[41] preceded with $^1/_2$-drachm doses of laudanum and followed with sinapisms to the stomach. Balmain, quoted by Zimmermann,[42] who had been in the habit of treating the malady with small doses, suddenly changed his views when he

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[27] De la Dysenterie.
[28] Mat. Med. and Therap.
[29] Prac. Med.
[30] Mat. Med., Pharm., and Spec. Therap.
[31] Therap. and Mat. Med.
[32] Modern Mat. Med.
[33] Atlanta Med. and Surg. Jour., vol. of '75.
[34] Prin. and Prac. of Therap.
[35] The Lancet, vol. ii, '90.
[36] Ind. Med. Gaz., '91.
[37] The Pract., '93.
[38] Pharm., Mat. Med., and Therap.
[39] Lancet, '58.
[40] Madras Med. Jour., Jan., '61.
[41] *Op. cit.*
[42] De la Dysenterie.

found that a neighboring charlatan was employing even as high as 2-drachm doses (along with 40 minims of laudanum), with a greater measure of success than had accrued to his own efforts: practically the same method as that advocated by Playfair, of Calcutta.[43] Delioux[44] used large doses in the form of infusion or decoction, and found that, after the vomiting and nausea caused by the first doses had subsided, complete tolerance was established and the abdominal pains mitigated; also that, though the stools were more numerous the first day, they were less so afterward, and their character speedily modified, for they grew more bilious and consistent, and were even sometimes molded; also the pulse was lessened, surface-temperature lowered, and diaphoresis established. Maclean, of London, and Whitehead, United States Navy,[45] are both advocates of large doses, which they believe should be administered as early in the disease as possible; and Ward[46] corroborates this opinion. Hale White[47] thinks ipecac is a specific for dysentery in large doses (60 to 90 grains) if given singly; also in doses of 20 grains given every four hours. Casvasjee, of Bombay,[48] is much of the same opinion as regards epidemic or sporadic dysentery; but, where the doses are to be repeated, he gives one-third more of the drug, and likewise employs opium and sinapisms.[49] Biddle[50] corroborates both the foregoing authorities, making his largest dose 120 grains, adding that, if no effect is produced in two days' use of the drug, it is best to abandon altogether. Martindale and Westcott,[51] citing various English journals,[52] call attention to the value of non-emetinized ipecac, so-called, in dysentery, but state that it is not generally entirely free from alkaloid; this statement is corroborated by an East-Indian author,[53] who says he prepared some ipecac in this way for some Bombay physicians that proved eminently satisfactory, in that it produced neither nausea nor depression, which perhaps is not so much to be wondered at, considering that he naively remarks: "It was given in 20-grain doses thrice daily, preceded by 30 minims of tincture of opium, with a sinapism to the epigastrium." Murrell[54] thinks that from 20 to 60 grains should be given at a dose suspended in 2 drachms of syrup of orange and $^1/_2$ ounce of water; no other fluid of any kind should be allowed to be taken, and the patient should be kept lying down with a chloroform poultice on the abdomen. The dose may be repeated in six or eight hours. Ringer and Sainsbury[55] declare it is well known that this drug is largely and beneficially employed in dysentery; but in some epidemics it answers admirably, while in others it appears to fail; but large doses are generally required, and they often succeed when small ones fail. Butler,[56] while admitting that it may be of value in other acute dysenteries, believes its greatest benefit is in that of bilious type; whatever the character of the malady, the drug is the more efficient the earlier

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[43] Edin. Med. and Surg. Jour., vol. ix.
[44] Bull. de Thérap., vol. xii.
[45] Naphey's Med. Therap.
[46] Med. Times and Gaz., Feb. 22, '73.
[47] Mat. Med. and Therap.
[48] Prac. Vade Mec.
[49] *Vide* Docker.
[50] Mat. Med. and Therap.
[51] Ext. Pharm.
[52] Practitioner, vol. i; Med. Chron., Aug., '93; Pharm. Jour. and Trans., '93.
[53] Prescrib. Pharm., '91.
[54] Manual Mat. Med. and Therap.
[55] Hand-book Therap.
[56] Text-book of Mat. Med. and Therap.

it is administered. Pearce,[57] in the epidemic on the ship *Arabia*, in which there were 56 cases and 4 deaths, treated all sufferers with ipecac: 20 to 30 grains at the first onset, and in one hour 10 to 20 grains; in another hour 10 grains. Hot-water fomentations were kept over the abdomen. Vomiting was rare.

Our Associate Editor, Dr. W. W. Johnston,[58] states that the fluid extract of ipecacuanha, 30 to 50 drops in 2 or 3 drachms of water, every 6, 12, or 24 hours, combined with tincture of opium if not retained, is an excellent method of administering this specific remedy, The use of ipecacuanha powder which has been deprived of emetine is advocated by Harris.[59] The ipecacuanhic acid is at first abstracted, but subsequently remixed with the powder after the emetine has been removed. Patients thus escape the nausea and prostration of powdered ipecacuanha.

In Bengal the great faith in ipecacuanha continued unabated. W. J. Buchanan,[60] with many observers, wrote that castor-oil should be given the night before, and, after the bowels have moved in the early morning, tincture of opium (20 minims), followed in fifteen or twenty minutes by ipecacuanha in a dose of 25 or 30 grains. The patient should lie undisturbed for four or five hours. Should vomiting occur, ipecacuanha to be repeated in half an hour and also if the stool has not much changed for the better within twenty-four hours. Ipecacuanha in pill, in doses of from 3 to 5 grains, he considers as utterly useless. Testevin,[61] in a garrison epidemic, employed ipecacuanha and saline purgatives for chronic cases in which malaria had much to do with the condition. The local treatment consisted in warm creasote enemata, made with milk, prepared as follows:—

℞ Beech-wood creasote, 15 grains.
Tincture of opium, 10 drops.
Boiled milk, 5 drachms.

The contents of the bottle were poured into a jar containing 7 ounces of boiled water, for one enema. He administered three such enemata in the twenty-four hours, after the rectum had been thoroughly washed out with boric-acid solution containing also salicylic acid.

It will be remembered that, during the rebellion, ipecacuanha did not give the satisfactory results expected. Osler has also been somewhat disappointed with it. T. R. Wiglesworth[62] tried ipecacuanha several years in Nicaragua, Central America; notwithstanding its vaunted efficacy, no case derived much benefit from it. He found that patients suffering from dysentery could not always retain the large doses recommended in text-books. But one-half ounce doses of a saturated solution of magnesium sulphate and 15 minims of dilute sulphuric acid every two hours, with milk diet, caused all traces of blood to disappear from the stools in twenty-four hours, and there was a complete absence of the distressing nausea which is always present in the treatment by ipecacuanha.

Magnesium Sulphate.—Latterly the idea has gained new ground that measures tending to at the same time deplete the mucous layer of the intestine, and yet inhibit undue peristalsis, are most effective in relieving acute dysentery. Thus has been revived the use of Epsom

[57] Provincial Med. Jour., Oct. 1, '90.
[58] Annual of the Univ. Med. Sci., '89.
[59] Lancet, Aug. 30, '90.
[60] Practitioner, Dec., '97.
[61] Med. Week., p. 252, '96.
[62] Brit. Med. Jour., Feb. 26, '98.

salt, which held a high place, in the earlier part of the century, in the armamentarium of European physicians.

Trousseau[63] found it very valuable in an epidemic of dysentery that broke out in the neighborhood of Tours in 1826, in which he gave 3 or 4 drachms daily in solution. Giacomini[64] made use of much larger quantities, even an ounce and more at one dose, with the effect of arresting all the discharges at once. Stillé[65] dissolves an ounce in a pint of water, of which solution he recommends 2 ounces to be ingested every two hours; he adds that from the very commencement of the operation of the salt the tenesmus and bloody discharges diminished. The sthenic forms of dysentery appear to show the efficacy of the method most clearly. Waring,[66] who is upheld by most Anglo-Indian physicians, objects to the remedy for use in the tropics, since experience has shown that natives and long-resident Europeans bear the action of the salt badly. Austin Flint, Sr.,[67] also opposed the drug, his motto being "opium, early and persistently"—the old idea of Clark of "putting the bowels in splints." Webster[68] thinks the drug will afford quicker and as complete relief as ipecac; but he would administer in conjunction with aconite; he considers a grain given every hour in a tablespoonful of water "a specific." Locke[69] says that the drug in large doses—*i.e.*, from 60 to 120 grains —asserts itself suddenly after a constipated habit in dysentery, but only 1 to 2 grains when the disease is the outcome of a primary diarrhœal attack; he combines it with ipecac and aconite. Goss[70] considers it an excellent remedy in many cases, but it is by no means universal in its applicability. Stevens[71] considers that its principal virtues rest in the fact that it is non-irritating and does not materially increase peristaltic action, while it is effective in clearing the bowel. Biddle[72] considers that it is inferior to the Rochelle salt; but when employed, he thinks opium should be conjoined thereto. In the early stages of dysentery, says Nevins,[73] before there are any very marked changes in the intestinal mucous membrane, there is scarcely any remedy which can be regarded as of equal value to this; it should be dissolved in a wineglassful of water with a few drops of dilute sulphuric acid, and given every hour until it is evident that complete evacuation of fæcal matters has taken place. This view is sustained by all recent writers on the subject. Bahadurji[74] states that he has reduced the mortality of from 5 to 10 per cent. to practically *nil*, by avoiding all irritants and stimulants, rendering the intestinal canal aseptic by preventing the decomposition of contents, by counteracting acidity of the blood by alkalies and thus quieting the abnormal action of the intestinal glands, and by limiting the diet to arrowroot-milk and the active remedial agents to trinitrate of bismuth, Dover's powder, and soda. The use of half an ounce of sulphate of magnesia or sulphate of sodium followed by 20 drops of Sydenham's tincture of opium as soon as the action of the salt is over is considered as curative by

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[63] Archiv. Gen., xiv.
[64] *Loc. cit.*
[65] Mat. Med. and Therap., vol. ii.
[66] Prac. Therap.
[67] Naphey's Med. Therap.
[68] Dynam. Therap.
[69] Mat. Med. and Therap.
[70] Mat. Med., Pharm., and Spec. Therap.
[71] Manual of Therap.
[72] Mat. Med. and Therap.
[73] Foster's Dic. Prac. Therap., vol. i.
[74] Brit. Med. Jour., Oct. 24, '91.

Cawasjee.[75] A saturated solution of magnesium sulphate has been urged by many Europeans observers: to an ounce of saturated solution of magnesium sulphate, 10 drops of dilute sulphuric acid are added; this is given every hour or two until it operates freely and the stools have become feculent, free from blood and mucus, and the pain and tenesmus are relieved. Leahy[76] treated 95 cases at Hyderabad, India, by this method. The number of days under this treatment before the dysenteric symptoms disappeared was never more than five, and in many cases one or two only. V. G. Thorpe[77] also found that drachm-doses of a saturated solution of Epsom salts, in combination with 10 minims of dilute sulphuric acid, every hour, are strikingly effective, while large doses of magnesium sulphate with sulphuric acid, at frequent intervals were found very effective by W. Wyatt Smith[78] who arrived at the following conclusions, after an experience including a large number of cases of acute tropical dysentery: (1) ipecacuanha is useless, if not worse; (2) opium is positively poisonous in these cases; (3) the treatment of dysentery is essentially purgative; (4) magnesium sulphate is practically a specific.

Substitutes.—During a campaign such as the one just entered upon, the likelihood that the supply of any special remedy may become exhausted with remote chances of prompt renewal is very great. As in the case of cinchona salts, therefore, the editor has thought it advisable to add, to the two main remedies employed in dysentery, those that may advantageously be used as substitutes.

Aconite, 1 minim every half-hour for 8 to 10 hours, then 1 minim every hour, is suggested by Boru[79]; an early change in the character of the stools is noted. He is corroborated by Webster,[80] Locke,[81] and others.

Acid carbolic is employed by Amelung,[82] the administration of which he begins at once if the stools are already mucous, bloody, and accompanied by great tenesmus; but where the large intestine contains a quantity of hard fæcal matter, he first removes this by castor-oil. From two to five days after the beginning of the treatment the stools become quite watery, when he substitutes the carbolic by tannic acid (or some agent containing tannin) and opium. His views are in a measure upheld by Butler,[83] Mattison,[84] and others.

Acid Creasotic. — Occasional recommendations have been made regarding creasote and its derivative, and also the sulphocarbolates, which are to be classed in the same category with carbolic acid.

Acid Salicylic.—The same is equally true of this acid and also of salol. Cumbali[85] employed the former in conjunction with opium, and the latter is suggested by Campbell.[86]

Alum, too, has received a measure of attention, and the alum-waters are recommended by Biddle,[87] and Ringer,[88] though the consensus of opinion appears to be that this drug is more useful in the chronic than the acute form of dysentery.

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[75] The Practitioner's Vade Mecum, p. 912.
[76] Lancet, Oct. 4, '90.
[77] Brit. Med. Jour., Feb. 26, '98.
[78] Brit. Med. Jour., Jan. 29, '98.
[79] Ind. Med. Gaz., Mar., 88.
[80] Dynam. Therap.
[81] Mat. Med. and Therap.
[82] Berl. klin. Woch., Nov. 11, '73.
[83] Text-book of Mat. Med.
[84] Med. and Surg. Rep., Feb. 1, '73.
[85] Inter. klin. Rundschau, Apr. 20, '90.
[86] Texas Cour. Rec., Mar., '88.
[87] Mat. Med. and Therap.
[88] Hand-book of Therap.

Arsenic.—When acute dysentery has persisted for several weeks, perhaps assumed a semichronic form, and where the vitality of the mucous membrane has become impaired, it excels, says Webster,[89] the more popular ipecac and other vegetable drugs; but it requires to be employed with both judgment and caution. Ringer and Sainsbury,[90] however, believe it is more applicable to diarrhœa than to acute dysenteries.

Antipyrine. — Ardin-Delteil[91] employed this drug by enema, in the proportion of 150 grains to the pint of water, with the result that suffering was greatly alleviated; but he seems not to have derived any direct curative action therefrom.

Bismuth has ever been a remedy of repute, the subcarbonate, phosphate, nitrate, and subgallate being employed, their value, respectively, being in the order named. As the action of these salts is self-evident, and they are palliative rather than remedial, they may be passed over without citation of value or use. The doses sometimes recommended are large: 30 to 60 grains or 12 to 15 drachms during 24 hours.

Camphor was formerly in general use, but it seems less efficacious than in the diarrhœal fluxes, and has fallen into disrepute. Biddle[92] insists that it is useful only in the initial stage.

Cinnamon. — Powdered cinnamon mixed with water to make a ball, taken morning and evening, is a very old and effective Persian remedy, according to Avetoom,[93] who derived great satisfaction from it in thirty cases. One to six doses are required.

Colocynth.—This drug seems to enjoy a full measure of confidence. Webster[94] says that it is especially indicated in minute doses, often repeated, when the disease is attended by intense pain or there is much blood in the evacuations. Goss[95] says that, if attended with colic-like pains, 2 minims of tincture of colocynth every two hours will afford relief; but if the malady is attended by rawness, heat, and soreness of the rectum, like doses of tincture of aloes are more effective. Locke[96] declares that though serviceable in some cases, it is not applicable to all, and if there is any fever it is more effective when combined with aconite.

Creolin in 1-per-cent. solution as a rectal injection is suggested by Johnston.[97]

Ergot.—Gross[98] and many followers employ this drug by enema to the extent of 12 to 15 grains (an equal amount of fluid extract) in some bland fluid, or 6 grains (6 minims of the fluid extract) by the stomach if there is blood in the stool.

Garlic is a suggestion of Pilloy,[99] and prepared as follows he deems it an absolute specific: A dessertspoonful of peeled clove is boiled in a wineglassful of cows' milk and made into a jelly, which should be sweetened with a little sugar, and administered to adult patients every two hours.

Iodine is another old remedy of repute though little used of late years, and better suited to chronic than acute dysentery; it is chiefly employed by rectal injection. In the Dutch East Indies iodoform is employed in place of iodine, and

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[89] Dynam. Therap.
[90] Hand-book of Therap.
[91] Bull. Gén. de Thérap., Jan. 30, '98.
[92] Mat. Med. and Therap.
[93] Lancet, Mar. 2, '95.
[94] *Op. cit.*
[95] Mat. Med., Pharm., and Spec. Therap.
[96] Mat. Med. and Therap.
[97] Treatment, vol. iv, '97.
[98] London Pract., Nov., '68.
[99] Ind. Med. Rec., Sept., '96.

is credited with better results than the latter. Kotschorowsky[100] treated upward of 100 cases with iodine starch, to which was added a few drops of tincture of iodine, chloroform, and oil of cinnamon; he also gave the latter and oil of fennel by the mouth.

Mercuric bichloride, 1 to 1000, of which 6 ounces is used for injection, is recommended by Lemoine,[101] but he does not allow the fluid to be retained more than 10 minutes; cases were cured in from 1 to 3 days.

Mercurous Chloride. — Calomel has always retained a full measure of confidence among many of the older practitioners of temperate climes, whose opinions are voiced by Sir Ronald Marlin,[102] but it is generally employed in conjunction with other measures.

Mudar (*Calotropis gigantea*) is an excellent substitute for ipecac, according to Durant,[103] if prescribed in the same manner.

Monsoni Avata.—Maberly[104] considers this South-African plant most efficacious prescribed in 2- to 4-drachm doses of the tincture (5 ounces of drug to 32 of rectified spirit) every four hours.

Naregamia Alata. — Goanese ipecac, employed in the same way as true ipecac, is highly spoken of by Bictre, of the Monegar Choultry Hospital, Madras,[105] and by Schoengut.[106]

Newbouldia lacois is another new candidate for favor, and is lauded by Eastman.[107]

Naphthol Compounds. — Clark,[108] after treating 137 cases of dysentery during an epidemic of the malady in Alquizar, Cuba, says that the mortality among those treated by ipecac, calomel, opium, and other classical drugs, amounted to 9 per cent., but, among those treated by benzonaphthol, the death-ratio only equaled 2 per cent.; he gave an average of 45 grains daily to adults, and but little less to children.

Kartulis[109] employs naphthalin, giving preference to the following:—

℞ Naphthalin, 15 grains.
Calomel, 8 grains.
Bergamot essence, 3 minims.
Sugar, a sufficient quantity.

The whole to be divided into ten doses of which he gave one every hour. Hinterhof[110] chronicled equally-satisfactory results from the naphthalin employed by enema: 8 grains to 3 ounces of water. Glinsky afforded prompt relief to patients, also, by employing as a rectal injection an oleaginous mixture in which the naphthalin was suspended. Whitla[111] speaks of its use by Rossbach, who, while expressing himself in the highest terms regarding its use, adds that it is so difficult of solution that it can be administered in doses fatal to all minute organisms in the *prima viæ* without doing the patient harm, as it is not absorbed; but Whitla expresses the opinion that the drug has "lost ground." Unfortunately great confusion exists in the nomenclature of the naphthols, and the one mentioned by an author is not always the one intended or employed; thus is had "naphthalene," "naphthalin," "naphtalene," "naphtalen," all meaning "naphthaline." Then there is "benzoyl-naphthol" or "benzo-

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[100] La Sem. Méd., No. 62, '96.
[101] Bull. Gén. de Thérap., Jan. 20, '90.
[102] Epitome of Therap.
[103] Ind. Med. Gazette. Jan., '67.
[104] Lancet, Feb. 13, '97.
[105] Pharm. of Newer Mat. Med.
[106] Quar. Therap. Rev., No. 30, '90.
[107] Prov. Med. Jour., '94.
[108] Lancet. July 20, '95.
[109] N. Y. Med. Jour., Oct. 17, '96.
[110] Russ. Med., No. 21, '88.
[111] Pharm., Mat. Med., and Therap.

naphthol," by many supposed to be identical to isonaphthol (betanaphthol), but instead is only a derivative. Naphthalol is quite a different body, one that has never been employed in dysentery. The first two are the drugs employed and cited.

Narcotine (Anarcotine).—This opium alkaloid, contrary to the general view, is entirely devoid of narcotic power, but, on the contrary, is a tonic, diaphoretic, febrifuge, and antiperiodic of little (if any) less value than quinine. In the dysentery that supervenes during convalescence from, or as a sequel of, tropical malarial fevers, Waring[112] holds it superior to quinine, as it does not aggravate the local inflammation, but, on the contrary, tends to relieve pain and tenesmus. O'Shaughnessy[113] adduces the testimony of many Anglo-Bengalese medical officers in its favor.

Quinine.—When the dysentery is of asthenic and malignant variety, and also in advanced stages of the malady when the vital powers and nervous energy are much exhausted, Waring[114] believes that quinine combined with opium is apt to prove very serviceable. Clark, Douglass, Huxam, and others[115] employed the red cinchona-bark. Butler[116] holds quinine of value when the disease is the direct outcome of paludal miasm. Osler[117] suggests warm enemata, 1 to 5000, and declares that they are of great benefit.

Silver Nitrate. — Stevens[118] suggests silver nitrate, $^1/_2$ grain to 1 ounce of thin starch-water as a rectal injection, and he is upheld by Roth,[119] Hale White,[120] Ringer,[121] and Butler.[122] Fothergill[123] and Sir G. Baker[124] favor its use by the mouth also in minute doses, conjoined in pill form with either ipecac, rhubarb, or mercurial chalk, according to the circumstances attending the individual case. Gallay[125] gives elaborate directions as to the rectal use of the salt. He places the patient on the right side with the left thigh flexed and raised, and then first gives an enema of hot water, and, after it has acted, employs the nitrate-of-silver solution, to which 20 or 30 minims of laudanum are added. He is directed to retain it two or three minutes, but five is generally the maximum period. Sometimes it is evacuated in two movements, the second occurring after an interval of two or three hours. The only immediate or unpleasant consequence is a sensation of stricture in the lower part of the rectum, which, however, does not persist for more than 15 or 20 minutes. Often the first injection affords complete relief; but, if not, it is sure to supervene after the third or fourth operation. To secure a permanent cure, however, it is necessary to persist in the treatment some time. It would seem as if this procedure were more applicable to chronic than acute dysentery. West[126] employs silver nitrate in conjunction with quinine and creolin. Dayabhai[127] more nearly follows Gallay, employing a solution of the strength of 2 grains to the ounce, 5 ounces being the measure of a single enema.

Labarraque's Solution.—Morse[128] met

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[112] Prac. Therap.
[113] Bengal Pharm.
[114] Prac. Therap.
[115] *Loc. cit.*
[116] Mat. Med., Therap., and Pharm.
[117] Prac. of Med.
[118] Manual of Therap.
[119] Mod. Mat. Med.
[120] Mat. Med. and Therap.
[121] Hand-book of Therap.
[122] Text-book Mat. Med., Pharm., and Therap.
[123] Med. Observations and Inquiries.
[124] Trans. Coll. of Phys., vol. ii.
[125] Brit. Med. Jour., Feb. 2, '95.
[126] Med. Rec., Sept. 23, '93.
[127] Ind. Med. Rec., Mar. 16, '93.
[128] Cal. Med. Gaz., Sept., '68.

with marked success by throwing up into the rectum and colon from 2 to 5 pints of a solution of chlorinated soda, largely diluted—Labarraque's solution—1 to 20 parts of water.

Sodium Sulphate; Sodium and Potassium Tartrate.—The evacuant method of treatment led to the employment also of these two salts by many practitioners. Biddle[129] recommends the latter, while the former is advocated by Archintre,[130] who gives from 30 to 50 grains by the mouth, three or four times daily. Both have many followers.

Tannin and Drugs Containing Tannic Acid. — These are very ancient remedies, and are employed simply for their astringency, tannin being the type of all. These are upheld by Farquharson[131]; by Biddle,[132] who suggests its use both by stomach and rectum; and by many others, including Butler,[133] who prefers an enema of 10 grains of tannin in a 4-per-cent. solution of boric acid.

Turpentine.—In the advanced form of acute dysentery Copland[134] and Waring[135] highly praise turpentine fomentations to the whole abdomen, and allowed each application to remain as long as the patient can bear it. It may also be exhibited internally, according to requirement, if the stools are bloody.

Veratrum Viride.—Ragland[136] relates a case having from 30 to 40 evacuations in the twenty-four hours in which this drug was employed. The pulse was rapid, small, wiry, about 130 per minute, and the temperature was 103.5°. It was with the view of controlling the too-rapid action of the heart that Norwood's tincture was prescribed, commencing with 3 minims, and increasing 1 drop each dose, which in six hours reduced the pulse some sixty-odd beats; but to his surprise markedly lessened the number of evacuations, and caused the reappearance of fæcal matters therein. Waring[137] also mentions the use of the drug in acute dysentery, but does not consider it "trustworthy."

Zinc Salts.—Zinc oxide and zinc sulphate are listed as remedies by many authors, but the former is more applicable to true diarrhœas, and the latter to dysentery of chronic form, except where it may be desired for its tonic effect.

Intravenous Injection.—Bosc and Vedel[138] employed in 4 cases intravenous injections of sodium chloride, 7 per 1000 being the maximum strength. By this means 3 of the 4 apparently hopeless cases were saved. From 12 to 24 drachms per minute of the solution is the extreme application of the method.

Surgical Measures.—On the theory that contraction of the sphincters prevents complete evacuation of the contents of the rectum, thereby inducing tormina and tenesmus, Patterson[139] resorted to dilation, the same as for anal fistula, with success. Stephan,[140] after all other measures failed, performed cœliotomy and established an artificial anus. Improvement soon set in, and as the case recovered the artificial anus gradually closed.

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[129] Mat. Med. and Therap.
[130] Archives de Méd. et de Pharm. Milit., Aug., '90.
[131] Therap. and Mat. Med.
[132] Mat. Med. and Therap.
[133] Text-book of Mat. Med., Pharm., and Therap.
[134] Dic. of Prac. Med., vol. i.
[135] Prac. Therap.
[136] Med. Rec., July 15, '70.
[137] Prac. Therap.
[138] Le Presse Méd., '96.
[139] Atlan. Med. and Surg. Jour., Mar., '96.
[140] Berliner klin. Woch., No. 1, '96.

Tropical Diarrhœa.

Many are under the impression that the diarrhœas of the tropics are specific, but this Parkes,[141] who is, perhaps, without a peer in sanitary experience as connected with troops and the tropics, emphatically denies. He insists that there is no evidence that tropical diarrhœas, or "dysenteries" as they are often erroneously termed (see DYSENTERY), are different from those in other parts of the world, except as they may be modified by climatic and meteorological surroundings. He does not include in this category, however, the fluxes that accompany malarial disorders, more particularly remittent and bilious remittents, since these are to be regarded as manifestation of, or sequels to a pathological entity, and not as pathological *per se*.

Etiology.—The chief causes of army-dysentery, or diarrhœa, in the tropics, according to Wood,[142] are: impure water, impure air, improper food, exposure to cold and wet, and the obscure etiological factor recognized as malaria, to which Fothergill[143] very properly adds: unusual mental perturbation or agitation, excessive fatigue,—which is but another form of disturbance of nerve-function,—and excessive heat, this last being compensatory, as it were, to sun-stroke. Putting aside the two first-named causes, which are now well established, consideration may be had of the others. Parkes declares that any excess in quantity, and many alterations in quality of food,—especially commencing decomposition in the proteids, and perhaps the rancidity of the fatty substances,—may produce diarrhœa; that it, uncared for, in the tropics is apt to be merged into dysentery; much of the tropical diarrhœa, he points out, is *scorbutic*! As regards exposure to wet, he cites the evidence afforded by such army authorities as Annesly, Twining, Griesinger, Mouat, and Hirsch. Speaking of chill, which Fothergill also considers a potent cause of intestinal fluxes, it is pointed out that in most tropical countries chilling of the abdomen is regarded as particularly dangerous, and shawls and waist-bands (kamerband) are usually worn, while the great season of diarrhœas in the temperate zones is the heated term, when the abdomen has the least protection. [Hence the utility of the flannel bandages with which our troops are being provided.]

Many cases of tropical diarrhœa, doubtless, arise in consequence of congestion or obstruction to the portal circulation. Fothergill points out that it may arise from the obstruction due to cirrhosis of the liver with consequent ascites, or may take origin in general venous fullness the result of obstruction to the blood-flow through the right heart.

Sir Joseph Fayrer upholds Fothergill, and, writing to the latter, declares that "fatty, sugary foods and alcoholic drinks are responsible for most of the intestinal and hepatic troubles in hot malarious climates like India, the West Indies, the coast of Africa," etc. Persisted in, these, besides engorgements of the portal circulation, induce swelling of liver, and fatty or amyloid degeneration, — the

[141] Man. of Prac. Hyg.
[142] Health of Europ. Soldiers in India.
[143] Hand-book of Treat.

"gone" livers of planters and nabobs, and who suffer from the form of diarrhœa that is distinctively known as tropical, and which oftentimes, by its intractability, is the first evidence of cirrhosis. For a century this "tropical diarrhœa" has been admitted to be the direct outcome of high living—a superabundance of fats, sweets, spiced foods, and free indulgence in wine and spirits.

Treatment. — All authorities admit that the remedial measures must be instituted in consonance with indications, causes, and surroundings. Fayrer insists, first of all, on cutting off all fat or sweet foods and inhibition of beer and alcohol. Fothergill, quoting Prout, calls attention to a very important matter, viz.: that when excessive acidity prevails in the lower portion of the intestinal canal, particularly in the cæcum, the soluble antacids are of little value, owing to the fact that they are neutralized and absorbed before they reach the seat of the affection, hence the insoluble antacids, especially magnesia, will be found more useful. Cajeput-oil is a favorite remedy with him, as being both a diffusible stimulant and soother to mucous membranes. He also points out that, where there is obstruction to the portal circulation, astringents are injurious, and in the tropics may lead to fatality; furthermore, that, when the flux arises from congestion due to insufficiency of the right heart, digitalis and iron often work a seeming miracle.

Lemons and Limes. — Ferguson[144] quotes numerous authorities to sustain his own experience that the juice of either fresh lemons or limes is often an important measure in controlling acute diarrhœa in the tropics; among others a letter from O'Connor, of Trinidad, who lauds the use of the remedy in the form of diarrhœa known as "bische." which almost merges upon an acute dysentery. Waring[145] says it is a favorite remedy with the Burmese of the Tenasserim provinces, who take it in large quantities, and further expresses the opinion that it merits careful trial.

Ipecac.—Waring[146] also highly praises ipecac, which he has often found very serviceable, sometimes effecting a cure when other remedies have been of no avail; when it fails in small doses, a full dose to produce emesis often proves effectual. He is corroborated by Linnæus,[147] Fothergill,[148] Sir G. Baker,[149] and many others.

Ergot has been successfully employed by many. Wright, Stout,[150] and many others claim excellent results from the use of freshly-powdered ergot in 5-grain doses (5 minims of fluid extract or normal liquid), and in one instance the remedy prevented the supervention of dysentery, which was already manifesting itself.

Aperients.—Clapton[151] says ordinary simple diarrhœa scarcely requires any medical interference beyond rest and plain, nutritious, unstimulating foods; but in the presence of an epidemic of diarrhœa, every case, however mild, should be carefully attended to. Inasmuch as the malady in most instances arises from indiscretion of diet, where this can be ascertained, non-saline aperient is indicated.

Chambers[152] also believes in paying first attention to diet; but he also offers

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[144] Ed. Med. and Surg. Jour., '87.
[5] Practical Therap.
[146] *Op. cit.*
[147] Amoen. Acad., vol. viii.
[148] Med. Obs. and Inq., vol. vi.
[149] Trans. Coll. Phys., vol. ii.
[150] Edin. Med. and Surg. Jour., '49.
[151] Brit. Med. Jour., Sept. 30, '71.
[152] The Indigestions.

the following aphorism: If there are lumps of feculent matter in the stool, and a smell like that of normal excrement, purgatives should be given; but these should be abstained from when there is no normal smell present.

Raw Meat.—Druitt[153] has had abundant opportunities of proving the efficacy of raw, finely-scraped or pounded meat: beef or mutton. The muscular substance must be rendered fibre- and fat- free, and so prepared as to form a soft, pink pulp, giving no feeling of resistance when squeezed between the fingers. It may be given by itself, or made into a jellied chop by diffusing it through a stiff meat jelly and allowing to cool in a shape.

Zinc Oxide. — Brakenbridge[154] lauds this remedy, which he deems superior to the bismuth salts.

The following pill (after a dose of castor-oil has cleared the intestinal tract) has proved of exceptional value in the hands of the editor:—

℞ Oxide of zinc,
Camphor, of each, 1 grain.
Opium, $^1/_2$ grain.

It should be taken every three hours four times, then after each stool.

Castor-oil; Epsom Salt; Opium.—Tongue, Duffin, and Broadbent,[155] all note a preference for castor-oil, or castor-oil and laudanum, though the last named sometimes resorts to sulphate of magnesia with ether, etc., followed by stimulant aromatic tonics; but if the diarrhœa is of two or three days' standing he prefers aromatic sulphuric acid and opium.

Creasote. — Johnson suggests $1^1/_2$ minims of creasote in combination with 2 grains each of opium and capsicum, with krameria enough to form a pill; two such pills to be taken every two hours until violent symptoms are relieved.

Other Remedies. — It seems hardly necessary to mention remedies which are well known, and will suggest themselves according to the exigencies of the individual case. Our object has been to point to what have proved of especial value in tropical diarrhœa. The following may also be found available, according to Webster[156] and Goss,[157] both Southern authorities: Aconite; silver nitrate; strychnine arsenite; potassium bichromate; calcium phosphate and sulphate; cistus Canadensis; dioscorea; epilobium; erigeron; eryngium; ferric phosphate; geranium maculatum; hæmatoxylon; arsenic iodide; oris; juglandis; kaki; lactic acid; magnesium phosphate; melilotus; myrica cerifera; œnotheria biennis; pancreatin; guarana; plantago majalis; polyporus; potassium chlorate and phosphate; pulsatilla; rhus aromatica and rhus glabra; sodium chloride, phosphate, and sulphate; sumbul; triosteum; veratrum album; xanthoxylum.

Other remedies that find more or less definite application are: alkalies; alum; aromatics; ammonia and ammonium salts; arsenous acid; baël; calumba; camphor; carbolic acid; cascarilla; chamomile; calcium carbonate and chloride; cerium salts; cera alba; charcoal; chloroform spirit, chlorodyne and chloranodyne; chondrus crispus; coca and cocaine; cold affusions, enemas, and packs; colocynth; copper salts; coto and para-coto; elm-bark; euphorbia pillulifera and corallata; guaco;

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[153] Med. Times and Gaz., July 2, '90.
[154] *Loc. cit.*
[155] *Loc. cit.*
[156] Dynam. Therap.
[157] Mat. Med., Pharm., and Spec. Therap.

golden seal; iron salts, especially the pernitrate; lead salts; leptandrin; lime-water; lythrum salicaria; mercury salts; mineral acids; betanaphthol; nux vomica; pepsin; podophyllin; pomegranate; quassia; rhubarb; rubus villous; salicylic acid and the salicylates; salicin; salol; sappan-wood; tannin and tannates; taka-diastase; tormentilla; turpentine; wahoo; zinc salts; spinal applications, hot or cold; cold or hot packs; sitz-baths; blisters; emetics.

More or less of the foregoing are also available in subacute and chronic diarrhœas (see DYSENTERY).

Venomous Bites and Stings.

Mosquito.—In previous numbers of the MONTHLY CYCLOPÆDIA (January and May, '98) we have shown the important rôle attributed to the blood-sucking mosquito (*Culex auxifer*) in the causation of malarial fevers. Besides this power of transferring the germ thought to be capable of giving rise to the plasmodium malariæ, the mosquito is also a medium for the transfer to human beings of the filaria sanguinis. In the present campaign which will force our troops to regions where the mosquito and malaria are common sojourners, prophylactic means as regards this insect are extremely important, the annoyance caused by the bites being insignificant when compared to the diseases to which they may give rise. The fact that yellow fever has also been included by some observers in the list of affections which the mosquito may convey by his bite adds further emphasis to the necessity of doing everything possible to prevent his attacks—or, rather, her attacks, for the female alone is the offending party.

Prophylaxis.—We, fortunately, have, in carbolic acid, an excellent preventive agent, not only against the mosquito, but also one tending to keep off the numerous other pests—ticks, fleas, lice, horse-flies, etc.—with which the tropical countries are infested. The use of a strong carbolic-acid soap for washing purposes suffices when insects are not numerous; the stronger the odor of carbolic acid given off by the skin, the better. In malarial regions, however, especially when mosquitoes are numerous,

Larva (*b*) and pupa (*c*) of the blood-sucking mosquito.

the protection must be increased in proportion. This can easily be done by dipping the hands, after the ablutions are over, into a bucketful of water containing an ounce of carbolic acid, and passing them, while wet, over the face, neck, and ears—any portion of the body that may be exposed. If the parts thus moistened are not wiped the water will evaporate, leaving a thin film of carbolic acid over the skin, which thoroughly protects it until completely washed off

by the perspiration. A bucketful of such a solution is sufficient for twenty men, and will protect them efficaciously three or four hours during the march. If resorted to before retiring, the protection usually lasts during the sleeping-hours. Of course, the odor of carbolic acid is not pleasant to everyone, but what surgeons have continually to bear in hospitals should not be shirked by soldiers.

When carbolic acid is not available an emulsion of common kerosene or petroleum is an excellent substitute, the fumes of the pure article being fatal to the mosquito. This fact affords an easy way of disposing of those that may be found sitting upon the walls of the interior of the tent and which, owing to the pliability of the canvas, cannot be killed. A few drops of petroleum held in any open receptacle a few inches under the insect causes the latter to drop dead.

When forced to camp close to foul, mosquito-breeding pools, the water of which cannot be used, the mosquitoes infesting it, their larvæ, and nymphæ can easily be overcome by pouring into each sheet of water a quantity ranging from a few ounces to a pint of petroleum. This gradually spreads on the surface and the local supply of insects is, at least, greatly reduced. This plan, recently tried in New Jersey, has been found very effective.

A simpler method is that suggested by the Public Health Journal,[158] which states that the mosquito in all its phases may be killed by contact with the most minute quantity of potassium permanganate. A 1 to 1500 solution distributed in mosquito-haunted marshes or grasses will render the development of the larvæ impossible; while a handful of permanganate will oxidize a ten-acre swamp, kill its embryo insects, and keep it free from organic matter for thirty days at a cost of 25 cents. A single pinch of permanganate has killed all the germs in a thousand-gallon tank.

As prophylactics against the attacks of insects and other disease-breeding germs, the Zulus and the natives of many tropical countries anoint their bodies with fat. Hence, the probable explanation of the preventive value of an ointment containing $^1/_2$ drachm to the ounce of betanaphthol,—which also greatly reduces the irritation caused by the bites and stings of any insect. It must be said, however, that the sensation produced by a coating of grease over the face during hot weather is anything but pleasant—at least, for a white man.

Treatment. — For the treatment of mosquito-bites the application of aqua ammoniæ may counteract the infectious principle, but this is doubtful, for it does not penetrate the tissues, as did the insect's bill. At any rate, it reduces the suffering if applied with a little rag and left *in situ* a few moments.

Menthol sometimes affords considerable relief, the crystalline solid or camphoraceous substance being rubbed over the surface.

Neal[159] highly recommends the following mixture for local application:—

℞ Pulv. ipecacuanha, ʒss.
Spir. vini rectif.,
Ætheris, of each, ℥ss.—M.

Ottinger[160] affirms that ammonia is of little benefit, and that the best results are obtained from the application of ichthyol. In numerous bites and stings of flies, gnats, bees, wasps, etc., he found that it quickly and surely caused the

[158] Med. Rec., Apr. 23, '98.
[159] N. Y. Med. Times, '91.
[160] Munch. med. Woch., Dec. 8 ,'96.

phenomena of inflammation—which he attributes to its vasoconstrictor action—to subside. It is best applied pure, in pretty thick layer, though it may be used in the form of an ointment.

Morris[161] also suggests painting the bites or stings with a saturated solution of either camphor or salol in ether; or a mixture of 30 grains each of salicylic and benzoic acids in 7 drachms of collodion, may be tried.

Brocq and Jacquet[162] recommend the following as effective for the bites of fleas, mosquitoes, gnats, sand-flies, mites, etc.:—

1. ℞ Camphorated oil of chamomile, 100 parts.
   Liquid styrax, 20 parts.
   Peppermint essence, 5 parts.—M.

Also

2. ℞ Peruvian balsam, 5 parts.
   Styrax ointment, 25 parts.
   Olive-oil, 20 parts.

Lastly. 3. Naphthol, 20 to 40 parts, in sufficient ether to dissolve it; menthol, 1 to 4 parts; vaselin, 400 parts.

Surgeon Major Wrafter[163] states that sodium bicarbonate in a little water is often a very effective remedy, or the juice of a plantain-leaf or of a raw onion. Sometimes oil of lobelia proves magical; also dilute carbolic acid. In Australia a poultice of powdered ipecac is largely employed.

When many bites have caused violent local tumefaction and congestion a cold lead-water poultice forms a very soothing application. Lemon-juice is also useful.

Gnat and Sand-fly.—Closely allied to the mosquito, but much more vicious and virulent, is the gnat of the tropics, against which mosquito netting is no barrier.

Even a greater pest is the minute sand-fly, which is more difficult to cope with, and more venomous than either the gnat or mosquito. This, like the two preceding, is most abundant near the water, but unlike the latter it does not haunt marshy districts and damp herbage, but rather sandy and ridgy ground. The remedial and preventive measures

Sand fly.

recommended in the case of mosquitoes are also useful here.

Horse-fly. — It may prove useful to officers and cavalry to know that the solution of 1 ounce of carbolic acid to a bucketful of water, sponged over horses protects them against the onslaught of their most active tormentors.

Indeed, these so-called "horse-flies," or deer-flies, will also attack man, and

Tabanus: horse-fly.

are the torture of all four-footed creatures in the tropics. All are blood-suckers, and often deposit their larvæ along the spine, where the skin is thinnest, of horses, mules, etc.; one species deposits its eggs in the nose of these creatures.

[161] The Practitioner, Aug., '96.
[162] Indép. Méd., Oct. 20, '97.
[163] Ind. Lancet, June 1, '97.

A bite of one of these horse-flies is painful and will induce swelling and inflammation that will last for days; it may even induce blood-poisoning. The carbolic acid is also useful to reduce the swelling and pain of the bites.

Where there are larvæ in the nose of a horse or mule, a douche of a solution of corrosive sublimate, 1 to 3000, or stronger, is usually very effective, and should be followed by insufflations of calomel; the same treatment applies to man when flies of a smaller variety, as they sometimes do, deposit their larvæ in the nasal cavities. In this case, however, the most effective measure consists, when maggots have formed in the nasal cavities, in injecting a 50-per-cent. solution of chloroform. Sometimes it is necessary to inject pure chloroform, the pain being allayed by later injecting carbolized oil or a solution of cocaine.

Diablito Colorado. — Another plague of tropical climes is an exceedingly-minute insect which lives in the grass and on shrubs; and so minute is it that it is necessary to bring the eye close to it in order to detect its presence. It has a variety of local names, notably *diablito colorado,* though the French, because of its bright-scarlet hue, term it *bète rouge.* It abounds during the rainy season, and its bite causes intolerable itching, which, as Schomburg expressed it, "by day drives the perspiration from every pore, and at night makes one's hammock resemble the gridiron on which St. Lawrence was roasted."

The itching is relieved by rubbing the spot with strong lime- or lemon- juice, alcohol, rum, camphor, or a fairly-strong solution of carbolic acid; it must not be scratched on any account, according to G. A. Stockwell, for if the skin is broken or abraded the result is apt to be a most ugly sore, very difficult to heal.

Chigo. — Another insect, one that closely resembles the common flea, and that in Cuba and Porto Rico demands to be specially guarded against, is the *nigua,* chigo, or jigger. It is the female only that is annoying, and she is especially apt to work her way beneath the skin at the ankles, or preferably at some part of the foot, most often between the toe-nail and the flesh, but sometimes between the toes. Having buried herself, an intolerable itching results, at first rather agreeable than otherwise, but after a few hours merging into most violent pain. At the same time a small, white, bladder-like tumor about the size of a pea, with a dark spot in the centre develops under the skin.

The tumor is the rapidly-growing nest, developed from the posterior portion of the body of the chigo, and the black spot is the anterior portion of the little pest. To rid the part of the incumbrance, Mexican guides apply a lighted cigarette to the spot, the heat of which penetrates sufficiently to destroy the insect. But a somewhat more delicate operation is performed by negro women, who are generally very expert. With a fine needle they remove the skin from the little ball or nest precisely as one would peel an orange, and then making pressure with the thumbs succeed in squeezing out the sac of eggs; the cavity is then filled with snuff or tobacco to guard against the possibility of development of any eggs that may accidentally have escaped from the sac and have been left behind. The unacclimated persons and all new-comers are especially subject to the attacks of the chigo. Excruciating, violent inflammation and even gangrene have resulted from neglected chigo-sores.

Vivigagua.—There is likewise a species of ant that lives in considerable

colonies in the West Indies, chiefly in and about the sugar-cane fields, being very destructive to the canes; but it does not hesitate to attack the human who camps on or near its preserves, when it becomes more obnoxious than the ticks or even the *bête rouge*. G. Archie Stockwell states that this insect, the *vivigagua*, bites with exceeding fierceness, producing the impression that one has been pierced by a red-hot needle. Luckily it is by no means generally disturbed, and seldom takes the offensive save in the rainy season; and unfortunately there is no protection to be had from its onslaughts, or those of the ticks and *diablito colorado*, except carefully burning over the ground before camping, or using a liberal sprinkling of insect-powder, or of poke-root and borax mixed. But a certain amount of immunity may be had against ants and ticks, as well as centipedes, scorpions, spiders, and venomous reptiles by wearing tight, close-woven canvas leggings or high-topped boots.

Ticks. — Blood-sucking ticks are another annoyance of tropical regions. They bury the whole head in the flesh, and distend their bodies with blood ere they are discovered, and any ordinary attempt at removal only detaches the latter, leaving the head behind to create trouble.

The head should be removed with needle or knife, and the wound subsequently dressed antiseptically. The most blood-thirsty form is termed *Garapata*. Turpentine applied to the rear end of the insect sometimes causes it to loosens its hold. Again, a drop of chloroform injected with an hypodermic syringe frequently brings about the same result.

Spiders.—Spiders of infinite variety of sizes, color, and habits are numerous in the tropics. Though the majority are not to be classed as poisonous, their bites seem especially prone to develop the fevers of the region, or to provoke ulcerations that are healed only with the greatest difficulty. The ground and trap-door spiders grow to great size—often the body alone is 2 or $2^1/_2$ inches in length. They are hairy, most repulsive creatures, living in wells or tubes

The common trap-door spider.

excavated in the soil, with a trap-door atop which is closed when the tenant is at home. The common trap-door spider is generally known as "tarantula" in Jamaica and Cuba, because of its close resemblance (but generally is of smaller size) to the true tarantula, which is also found, but more sparingly. The latter is pictured on the next page. Both inflict wounds when opportunity offers, but these wounds are not of the highly

poisonous and dangerous nature generally imagined. Dr. G. A. Stockwell states that he has suffered from tarantula- and centipede- bites, and from scorpion-stings, and never witnessed any more untoward result than an ephemeral fever, and he would infinitely prefer such to the onslaughts of myriads of mosquitoes, ants, gnats, or the tortures inflicted by the *bète rouge*.

Still, the fact must not be forgotten that individuals weakened by fatigue, malaria, or the use of alcohol beverages, and children do not resist the venom with the same vigor, and that symptoms may be met in them which a strong man would in no way manifest.

Davidson[164] believes that most of the

The tarantula (Eurypelma Hentzii).

so-called spider-bites are due to some other insect, and in Southern California are inflicted by the "pirate-bug" (*Rhasahus biguttatus*), which is common in some periods in orchards, and may be found in sheets and about dwellings. He recommends the use of corrosive-sublimate solution, 1 to 500 or 100, and keeping the parts constantly wet with the same.

Waring[165] recommends a liniment made of ordinary ammonia-water, olive-oil, and laudanum, well rubbed over the bitten part, and a few drops of the ammonia-water in a tumbler of water if administered internally. The foregoing, he declares, is usually sufficient for the bites of scorpions, tarantulas, and other spiders, centipedes, and mosquitoes, as well as other venomous insects. He mentions guaco as a remedy of some repute, but is unable to afford it personal recommendation. Ipecac paste or poultice he fully indorses, however, and remarks that it sometimes proves a perfect specific.

Eclimacea augustifolia is lauded by Webster,[166] also sodium chloride.

It may be said that any of the preparations recommended for mosquito-bites are also useful in spider-bites. In severe cases the local injection of a 5-per-cent. solution of permanganate of potassium may prove advantageous, the patient's strength being simultaneously sustained by means of strychnine and, if need be, stimulants. Strong coffee enjoys great confidence in this particular in all tropical countries.

Taylor, of Denver,[167] treated a woman who showed severe symptoms after the bite of a large tarantula, which she had killed in her bed. The author used injections of $^1/_{60}$ or $^1/_{90}$ grain of strychnine, according to Mueller's method. The first injection, in addition to the strychnine, contained $^1/_{100}$ grain of trinitrin. The result was excellent. Charles Forbes[168] also employed hypodermic injections of strychnine with success in tarantula-bites.

Scorpion.—Scorpions are peculiar to the tropics and subtropics the world over, and equally abundant in the Philippines, Canaries, Porto Rico, and Cuba. They generally hide under stones, fallen tree-trunks, in the roof, cracks in the walls, thatch and dark corners of deserted huts, and obscure parts of inhab-

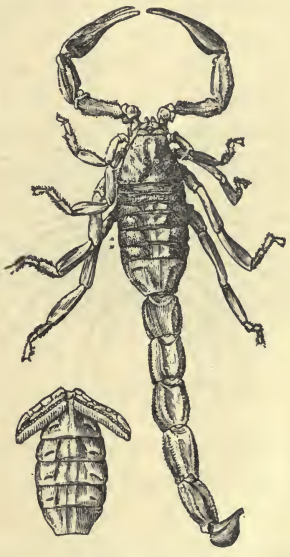
[164] Therap. Gaz., Feb., '97.
[165] Practical Therap., '96.
[166] Dynam. Therap., '93.
[167] Therap. Gaz., May 15, '95.
[168] Med. Press and Circular, Oct. 16, '95.

ited dwellings; they have an unpleasant way of hiding over night in one's boots, stockings, or trousers. Indeed it is wise, in tropical countries, to always examine one's clothes before donning them. The scorpion's weapon is in the tail, and is used by bringing the latter forward over the back and head; but the creature first endeavors to lay hold of the object it desires to sting with its clamp-like pincers, presumably to obtain better leverage for his weapon, or to prevent the escape of the foe. According to Stockwell, despite the statements of travelers, scorpion-stings, though painful, are not dangerous to a person in good health, and are easily relieved by camphor, rum, lemon-juice, or solution of carbolic acid, though inflammation may persist, sometimes with slight fever, for a couple of days.

According to Espinosa, of Mexico,[169] the poisoning proves fatal only in children. The oldest child dying under Espinosa's observation was one of about 11 years. Some persons seem not to be at all affected by the sting. Much depends on the species of scorpion, those from "hot lands" being most dangerous. Various remedies were tried, among others jaborandi and alcohol internally and suction, scarification, and ligature locally. No specific has been found. In the town of Durango scorpions abound, and the city authorities have for years given a small reward for those delivered to them. Boys, using long sticks with a burning coal at the end, smoke the scorpions from their nests, catch them, pinch off their stings, and collect them in bottles. In this way many thousands are killed every year.

Banerjee,[170] who, in two months in 1892 treated forty-two cases, states that there are four varieties of the animal, all poisonous. The symptoms observed in these cases were, for the most part, local and of varying intensity, although constitutional effects were also noted. In some cases an erysipelatous swelling requiring treatment remained about the part stung for as long as seventy-two hours. As a means of overcoming the distressing, burning pain, so common in this affection, chloral-hydrate, used locally by rubbing into the affected part, proved most efficacious in his cases.

Another Indian investigator, Poredi,



The scorpion.

of Akalkote, Deccan,[171] has used cocaine in some thirty cases of the same trouble. He states that the relief afforded by this agent is by no means always magical, as some earlier reports would have us believe, but that, in his hands, by its employment, relief, to a certain degree, was often obtained, and, as a rule, in from two to three minutes. His method was

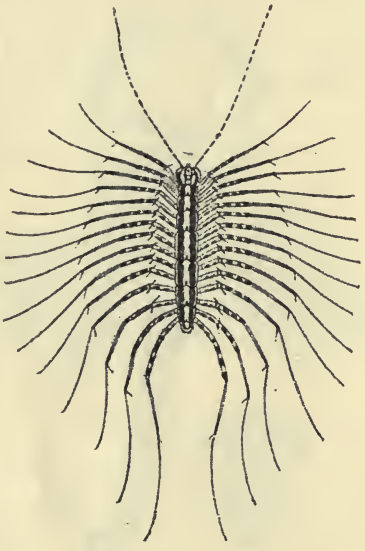
[169] Report of our Corresponding Editor Semeleder, of Mexico.

[170] Lancet, Oct. 1, '92.

[171] Indian Med. Rec., Dec., '92.

to use 1 grain of the drug in 10 to 15 drops of pure water hypodermically in the neighborhood of the bite.

Vinze, of the East Indies,[172] also highly extols applications of camphorated chloral (equal parts of camphor and chloral-hydrate). This mixture gives almost instant relief from the acute pain produced by the venom of the scorpion, it is stated. It only remains to combat the symptoms of collapse which super-



The inoffensive variety of centipede (Cermatia forceps).

vene in some cases, and for this purpose milk and brandy are recommended.

Joseph Benjamin[173] found aromatic spirit of ammonia in 30-minim doses in very hot water every half-hour a valuable remedy. Scorpion-bites in weak persons and children may be characterized by serious symptoms, collapse, clammy perspiration, and low temperature, lasting for seven or eight hours and followed by recovery.

Centipede. — The centipede is frequently met with in the tropics. Its size varies from an inch up to six inches in length, and of less than a quarter of an inch to the size of one's thumb in diameter. Its bite is about as venomous as the sting of the scorpion and may prove serious in children and persons weakened by excessive fatigue, disease, and the inordinate use of alcohol. The habits of the centipede are very like those of the scorpion. Its weapons are its jaws; and it has an unpleasant way of taking possession of loose wearing-gear and of climbing up trouser-legs. Like the scorpion, it is apt to penetrate into crevices and other dark places, and it occasionally ensconces itself into the depths of a boot or a shoe. Hence the advisability of always shaking out footwear before putting it on.

What is usually called centipede in our country is not the insect met with in the tropics. The form of which we give an illustration—namely, the *Cermatia forceps*—has very long legs, and only fifteen pairs of them. It usually lives under stones, logs, or bark. Although greatly feared when met in the kitchen or yard, it is harmless, and, in fact, as its aim is to destroy cockroaches, and feed upon them, it may be regarded as a welcome visitor rather than as an enemy. The venomous species may be recognized by the fact that its legs are quite short, and that each segment of the body bears a single pair of legs. The body is usually flattened and brownish yellow, and the antennæ are long and many-jointed, as shown in the annexed engraving.

The treatment of centipede-bites is the same as that of the sting of the scorpion.

Snakes. — According to G. Archie

[172] La Semaine Méd., vol. xv, No. 222, '95.
[173] Indian Lancet, Dec. 16, '96.

Stockwell,[174] there is but one virulent serpent in Cuba and Porto Rico, and but two in the Philippines. That of the former islands, known as *boaquira*, or *juba*, never more than four or five feet long, is identical with the rattlesnake of Florida, and fortunately can generally be recognized by its mode of coiling when about to assume the offensive, and the warning it always gives before striking.

There is also in this island a form of tree-boa known as the *maja* (pronounced "mah-ya"), which seldom exceeds seven feet in length. It is harmless as regards man, except when escape is impossible. Because of the peculiar, hooked character of its teeth it inflicts fierce, ugly, deep, and ragged bites, that may, though the creature is in no sense venomous, provoke bad ulcers.

Two venomous reptiles, besides a form of boa, inhabit the Philippines. One of the former frequently attains a length of nine or ten feet, and, unlike poisonous reptiles as a class,—there are but three or four exceptions,—is apt to take the offensive and attack man. One should never flee from it, since then his fate is sealed; but with a switch or club it is easily dispatched by a slight blow on the neck. The other venomous reptile is a small viper, apt to lurk beneath thick herbage; but it is for the most part nocturnal in habit. It is well to examine boots and clothing for its presence, before donning the same in the morning. This viper may be recognized by its club-shaped or obtusely-pointed tail.

The claim that venomous serpents can always be known by their broad, flat, lanceolate heads is by no means to be depended upon, according to Stockwell; but they usually exhibit an aperture or slit on each cheek behind the nostrils, and an elongate vertical pupil like many other nocturnal creatures—for venomous snakes are generally nocturnal or crepuscular, or both, and when met abroad in the day-time their presence is due to accident. Among distinctive features mentioned is the fact that no venomous serpent will ever be found in or on a tree, and most of them have clubbed, instead of slender tails. Rattlesnakes prefer, as a rule, the more dry, elevated, and stony districts.

When other evidence is lacking as to the character of the reptile, and it is desirable to ascertain whether a snake which has inflicted an injury is venomous or not, it may be pinned to the ground by means of a short-forked stick pressed upon the neck immediately be-

The venomous centipede.

hind the head, when the mouth can be pried open and examined for poison-fangs. Commonly, under such circumstances, the fangs will be seen hanging perpendicularly from either side of the forepart of the upper jaw, or they may be directed forward in a horizontal plane, just projecting beneath the upper lip: the position for wounding or striking. Again, if the creature is enraged, minute drops of mixed venom and saliva will be seen exuding and dripping from the fangs. If the serpent is quiescent, these fangs are retracted until they lie horizontally along the upper jaw with their points looking backward.

Although rattlesnakes are dangerous,

[174] Scientific Amer., No. 421.

more so in warm than in more temperate regions, Stockwell affirms that the wounds they inflict are not so universally fatal as popular prejudice would lead people to believe; were this not so, there would never have been exploited the number of nostrums that on various occasions have received credit as being "perfect antidotes" and "sure cures." He argues that as a matter of fact, there is no such thing as an antidote to serpent-venom; it is a physiological impossibility. The phenomena developed, including the swelling and discoloration of the parts, are attributed by him to the fact that the poison destroys the red corpuscles of the blood with which it comes in contact; these bodies become agglutinated; some, clinging to the walls of the smaller blood-vessels, produce the swelling and discoloration, while others, in agglutinated masses, are returned to the heart. In this form they do not take up any of the oxygen provided by the respiratory act, but are sent back through the circulation, a large proportion going to the brain and clogging its minute blood-vessels, interfering with function and provoking paralysis.

G. B. Halford, of Melbourne,[175] sustains the opposite view. While the venom acts primarily on the blood, and, secondarily, on the nervous system, the effects of the poison on the blood are manifested by non-coagulation of the latter in the production of large cells.

Brenning,[176] however, considers the large cells found by Halford to be merely altered leucocytes, and is inclined to think that the poison acts directly on the nervous system, causing, after a short period of irritation, paralysis of the respiratory centre.

The prevailing views are still those of Weir Mitchell and Reichert, who consider that the blood is rendered uncoagulable, the blood-corpuscles being disintegrated through the destructive influence of the venom upon protoplasm. Blood-extravasation occurs as a result, there is profound depression of the respiratory nerve-centre, medullary hæmorrhage, etc.

The powerful nature of the serpent-venom and its effect upon the circulation can be surmised from the fact that those poisoned develop most fœtid exhalations of body and breath, their mucous membranes, particularly of the nose and mouth, become spongy and bleed on the least provocation, and the hæmorrhage, though seemingly of natural hue, gives scarcely any stain or color to a handkerchief or other white cloth, evidencing the great destruction wrought among the red blood-globules.

Treatment.—The first step is to apply a ligature—a tightly-tied and twisted cord or handkerchief—about the bitten limb, and above the wound, and then, as soon as possible seek the services of a medical man. As the poison exerts its chief effect upon the brain and nervous centres, as evidenced by drowsiness, stupor, and failure of heart and respiration, every effort should be made to combat the two former and sustain the two latter, which is best done by violent exercise, which should be physically enforced if necessary. Not only will this sustain the heart and respiration, but it will tend to increase the cutaneous elimination of the toxic products resulting from the necrotic changes caused by the venom. Alcohol, except when given by a medical man to stimulate and sustain a flagging heart and circulation (and

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[175] Thoughts, Observations, and Experiments on the Action of Snake-venom on the Blood, '94.

[176] Die Vergiftungen durcg Schlangen, '95.

its action requires to be carefully and steadily watched) is detrimental rather than beneficial. Large draughts of strong coffee are, on the contrary, of great value.

Suction has often been resorted to; but this procedure is considered dangerous by some observers. G. Roux[177] advises the use of the dry cup instead of the mouth to exercise suction upon the wound. That serious effects may follow in a person who performs suction of a poisonous wound is shown by a case published by Hirschhorn.[178] After applying suction to the wound of a girl bitten by a viper, a man experienced a painful swelling of the left submaxillary region extending to the neck, the chest, and the upper extremity. Vertigo, inability to stand, and clonic spasms of the left side of the body occurred, and an exanthema resembling urticaria was present for two hours. Examination showed that inoculation had taken place through a lacerated gum, a tooth having been extracted shortly before.

A. Mueller[179] very strongly advocates the use of hypodermic injections of strychnine in the treatment of snake-bite. Large doses are given. In one case consciousness did not return until $^1/_{12}$ grain of strychnine had been administered. Mueller declares that its action is regular and prompt, and after a time stops entirely. The snake-poison develops regularly, but remains latent for some time; so that, when it has been apparently conquered for a time, it may suddenly start on a new course of symptoms. The strychnine injections should not be employed until unmistakable symptoms of snake-poison are perceptible, for it may act so slowly that the patient succumbs before the state which requires and neutralizes the action of the strychnine has developed. The patient must be watched for twenty-four hours after the disappearance of the last symptoms, in order to be able to combat, in time, a sudden relapse.

Of thirty-seven cases treated with strychnine by Joshua Duke,[180] recoveries took place in 67.5 per cent. Of this number, eight were reported by Banerjie, of Pachbadra, India, all of which recovered; in some cases the amount of strychnine was enormous (3 to 4 grains during a period of four days). He employs the nitrate of strychnine in $^1/_{15}$-grain doses, repeated about every two hours.

The conclusions reached by Duke are that the hypodermic injections of strychnine is the only remedy to be relied upon; these must be carried out with boldness, but only after the symptoms of snake-poison have become pronounced. If a proper amount of snake-poison to counteract the strychnine is not present in the blood, the latter may itself cause death. If the patients are moribund when seen,—*i.e.*, pulseless and respiration having ceased,—the intravenous method may be adopted.

A remedy now considerably employed in the treatment of venomous bites is a 1-per-cent. solution of permanganate of potassium. In the snake-infested portions of the United States its successful employment has been attested to by many cases.

H. C. Yarrow, of the United States Army,[181] conducted experiments with a view to ascertain the value of this salt as a remedy against the venom of the rattlesnake. In cases where the circula-

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[177] Le Bull. Méd., June 14, '95.

[178] Wiener med. Presse, No. 30, '95.

[179] Nederlandsch Tijdschrift voor Geneeskunde, Apr. 15, '89.

[180] Indian Med. Gaz., No. 6, '95.

[181] Forest and Stream, '88.

tion of the part *could be immediately arrested by a cord,* the drug, when introduced in and around the bite, proved effectual, but not otherwise, although injected within five minutes after the infliction of the wound. Experiments were also made with jaborandi, or pilocarpine, which seemed to prove that the remedy possessed certain antidotal properties.

Lacerda[182] recommends the subcutaneous injection of a solution of permanganate of potassium both around and into the bite in the treatment of snake-bites. In very poisonous varieties, a 5-per-cent. solution may be necessary. In adder-bites Dr. Sallden, a Swedish physician, has found a 1-per-cent. solution sufficient. The injection must be given as soon as possible. Ligation of the bitten limb will retard the absorption of the virus, but not over twenty-five minutes.

Calmette[183] has recommended serum taken from an immunized ass or a horse. Its immunizing power is, at least, 10,000; that is, an injection into rabbits of a quantity of serum equal to $^1/_{10000}$ of their weight enables them, one hour afterward, to support, without signs of poisoning, a dose of $^1/_{64}$ grain of dry venom of *Cobra de capello* of medium activity, the same dose being sufficient to kill control rabbits in less than four hours. If injected in sufficient quantity into persons bitten by snakes, the serum prevents the action of the venom, provided intoxication is not too far advanced. It must be injected as soon as possible after the bite. Generally it is efficacious an hour and a half after the bite in adults, who rarely die before three hours have elapsed after the bite of the most venomous species of snakes. The serum is active against the venom of all snakes. The dose varies according to the species of snake, the age of the person bitten, and the time of administration. Generally $2^1/_2$ fluidrachms are sufficient for children under 10 years, and 5 fluidrachms for adults. However, when the bite is that of a very dangerous species,—such as the *Cobra de capello,* the *Naja haji,* the *crotalus,* and the *bothrops* of the West Indies,—it is advisable to give one single injection of a double dose at once.

The first precaution to be taken is, as usual, to tightly bandage the bitten limb as near as possible to the bite and between the latter and the trunk. The wound is then to be washed with a solution of hypochlorite of lime diluted to $15^1/_2$ grains per 2 fluidounces of previously-boiled water. The dose of serum must be injected into the subcutaneous cellular tissue in the right or left side of the abdomen, and with the usual antiseptic precautions. Then, with the same syringe, 2 or $2^1/_2$ fluidrachms of the 1 to 60 solution of hypochlorite of calcium are to be injected in the different parts surrounding the bite and into the bite proper. These injections are intended to destroy, in and around the wound, the venom which has not yet been absorbed. After these procedures the bandage can be removed from the limb, the patient rubbed, given coffee or tea, and warmly covered, so as to cause abundant perspiration. The administration of ammonia or alcohol must be avoided.

The 1 to 60 solution of chloride of calcium may be employed alone, but Phisalix and Bertrand[184] conclude that the injections of calcium chloride must be made deeply at the actual spot where

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[182] Indian Lancet, July 1, '97.

[183] Brit. Med. Jour., July 20, '95.

[184] Indian Lancet, July 16, '97.

the fangs entered, and that they are useless if made in any other part.

Cases in which the use of chloride of lime produced favorable results have also been reported by Hodgson.[185] Mackenzie[186] and others claim that no local irritation ensues in the majority of cases.

Early, of Ridgeway, Pa.,[187] whose practice lies in the counties of Elk, Clinton, Cameron, and Clearfield, regions abounding in rattlesnakes, has treated successfully twenty-five cases of snake-bites by the free administration of olive-oil,—an old remedy.

Leech.—Besides the insects and reptiles so far mentioned, the Philippine Islands, according to Stockwell, are infested with a bloody-thirsty land-leech, most tormenting, but not dangerous, whose attacks in certain districts are not to be avoided except by the use of stout, tight-fitting, canvas leggings. "Countless hosts of these are met with in rising grounds contiguous to certain low-lying, dark jungles. They are about an inch in length, about the size of a fine, steel knitting-needle, but capable of distension until they have doubled their length and attained a diameter of a goose-quill. Their structure is so flexible that they can insinuate themselves through the meshes of a fine, silk stocking, not only seizing on the feet and ankles, but ascending to the back and throat and fastening on the most tender parts of the body: the scrotum, the thighs, and contiguous parts. The whites are obliged to protect themselves by means of leech-gaiters, the cloth being woven so closely as to be absolutely impermeable. With one extremity planted on the earth, and the other raised perpendicularly, these little pests look out for victims, and such is their vigilance and instinct that on the approach of man, horse, or buffalo, they may be seen among the fallen leaves and grass, even on the stalks of the latter, close to the edge of the path, poised erect, and waiting to attach themselves. Now, their peculiar mode of progression may be noted: semicircular strides, so to speak, advancing one extremity, arching the body and bringing the other extremity forward, till by successive advances they are able to lay hold of their prey. If it is a man, they ascend the clothing, seeking an entrance through its meshes: and the last of a party always fare the worst, for the little creatures gather with wondrous celerity, being guided apparently more by the vibration produced on the ground than phenomenal range of vision. Their size is so insignificant, and the wounds so skillfully inflicted, that their presence is usually unsuspected until the victim is warned by the trickling of blood or by the cold, clammy touch of the gorged leech pressing upon the skin. In those of robust health, leech-bites amount to little beyond mere annoyance, the difficulty sometimes encountered in stopping the bleeding, slight inflammation, and itching like that experienced from mosquito-bites; but in those of degraded habits, with the germs of tropical fever in their blood, the punctures, if rubbed or scratched, are liable to degenerate into ulcers that may lead to loss of limb or life. In 1815 during the Randyan rebellion in Ceylon, the white soldiers and Madras sepoys suffered so severely from land-leeches that great numbers perished. Horses and cattle are made wild by them, and stamp the ground with fury to shake them from their fetlocks, to which they hang in bloody tassels."

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[185] Australian Med. Jour., Dec. 20, '95.
[186] Australian Med. Jour., Dec. 20, '94.
[187] College and Clin. Record, Aug., '88.

Bee- and Wasp- stings. — Marquie[188] reported a case in which death followed a bee-sting. The individual had some time before been made very ill by a bee-sting, the inference being that he was the subject of an idiosyncrasy against this particular form of venom.

Vinze[189] states that camphorated chloral is extremely efficacious for the arrest of the severe pain caused by bee- and wasp- stings.

[188] Jour. de Méd. et de Chir. Pratiques, Dec. 10, '95.

[189] La Semaine Méd., vol. xv, No. 222, '95.

Cyclopædia of Current Literature.

ALBUMIN, SIGNIFICANCE OF, IN URINE.

Having determined positively that the albumin takes its origin in the kidney, its presence must be interpreted differently than was formerly the case. It is not serum-albumin, so-called, that is to be considered, but an innumerable variety of isomeric compounds of the proteid series. Its presence may indicate simply its substitution for urea, the structure of the kidney remaining unimpaired for months or years; it may indicate a transudation through the walls of the capillary blood-vessels in conjunction with a traumatism or a truly inflammatory lesion; or, lastly, it may indicate substitution for urea, with marked degenerative changes in the epithelial cells of the kidney. Absence of albumin, on the other hand, must not always be taken as a guarantee that the renal cells are sound; for there are many instances found on record in connection with necropsy-work in which the patients have died toxæmic from an inability of the renal cells to eliminate any form of nitrogenous waste, the urine prior to death being free from albumin and most of the catabolic excretory products; but at the post-mortem the kidneys were in an advanced state of retrograde metamorphosis. Porter (Phila. Med. Jour., April 2, '98).

ALCOHOL.

Use of.—No one should employ alcoholic beverages who has either a family history of drunkenness, insanity, or nervous disease, or who has employed them in excess in childhood or youth. Nor should they be used by the nervous, irritable, or badly nourished; by those who have suffered from injuries of the head, gross diseases of the brain, and sun-stroke; by those who suffer from great bodily weaknesses, particularly during convalescence from exhausting diseases, or are engaged in exciting or exhausting employments in bad air and surroundings as in work-shops and mines. Finally, all who are solitary, lonely, and require amusement, who have a lack of self-control either hereditary or acquired, or who suffer from brain-weaknesses, the result of senile degeneration, should abstain. Clauston (Quar. Jour. of Ineb., April, '98).

BERIBERI.

Symptoms.—On September 12, 1897, a P. & O. fireman complained of pain in the legs, difficulty in walking, fullness about the abdomen, and shortness of breath. There was some œdema over the spine of each tibia, also in the lumbar region, some effusion into the abdominal cavity; temperature normal; pulse, 120;

urine scanty, high colored, but with no albumin. He was vomiting food.

Treatment.—The patient was isolated. Milk, beef-tea, and lime-juice were ordered; also the following at one dose, every third hour:—

℞ Potassium nitrate, 20 grains.
Tincture of squill, 30 minims.
Tincture of digitalis, 8 minims.
Spirit of Mindererus, 30 minims.
Water, to make 1 ounce.—M.

The second day the temperature was normal, the pulse the same as the day before, but the vomiting had ceased. On the third day the pulse was five degrees higher, vomiting recommenced, and the urine was scanty and high colored, but with no albumin. He was now ordered milk and soda-water. In the evening the temperature was 100° F., and he was put in a hot, wet pack and kept there for a full half-hour. As a result, he perspired freely, and the temperature fell to normal. The fourth morning he was better, had not vomited; temperature, 100° F.; the pulse 130, rather incomprehensible; the urine still scanty. Dry cups were applied over the kidneys, followed by a poultice. The evening temperature was 102° F. and the patient was put in the hot, wet pack again, and as before perspired freely. On September 16th the morning temperature was 98.8° F., the pulse 130; the œdema did not appear to be less. The evening temperature was 101.2° F., and he was again put in the wet pack. On September 17th he felt much better, although there was a good deal of œdema still; the tension of the pulse was much less, and he was passing a fair quantity of urine; temperature, 98.6° F., and pulse, 120. The patient made a good recovery, and resumed duty on October 1st. The œdema had all disappeared. Crosthwait (Brit. Med. Jour., May 14, '98).

CEREBRAL HÆMORRHAGE.

A woman was seized with headache, loss of consciousness, and convulsions, and soon after recovery, which occurred without paralysis, she experienced a second and similar fit. From the last she also recovered, but with impaired vision. On a still later occasion she fell out of bed and was found afterward affected with left hemiplegia, death shortly ensuing. After death the three hæmorrhages corresponding with the three seizures were discovered. The first of these dated ninety-one days before death; the blood was yellow and dry; at the second site, thirty-eight days before death, the clot was gelatinous-looking, and lay in the left occipital lobe. The third clot was a massive one, and involved the basal ganglia. The heart in the same case presented a musculus papillaris inserted directly into the mitral valve. During fœtal life a spongework of muscle reached the segments of the valve, but later on the portions attached to the valve underwent fibrous transformation; in the present instance the fœtal condition had persisted. This condition of heart was first drawn attention to by Ogle. At times the muscular bundle is attached to the valve by either end, and is obviously a persistent relic of what at one time obtained in fœtal life. Freyberger (Brit. Med. Jour., April 23, '98).

CHOLAGOGUES.

Experiments were conducted on a patient with cutaneous biliary fistula, in moderately good health, the obstruction to the common bile-duct being complete. Throughout the investigation, the patient was given purified ox-bile sufficient to approximate the experimental to the

normal conditions. The effects of different mineral waters were first studied, sulphur-springs, the strong Montpelier, the Kissingen, chloride-of-iron spas, Harrogate, and Carlsbad; the first, third, and sixth proved cholagogue, but the others caused a decrease of both solids and bile. Euonymin, sodium salicylate and benzoate, irisin, and podophyllin resin also proved cholagogue, and they markedly increased the total solids; but podophyllotoxin decreased both the solids and the quantity of bile. Hot and soda- waters in large doses were negative. Snow (Brit. Med. Jour., May 14, '98).

DOUCHE, NASAL, ABUSE OF.

In most cases nasal hypersecretion is due to other causes than inflammation of the nasal and retronasal mucous membrane: to sinusitis, deviation of the septum, some new growth in the nasal cavity, etc.; nevertheless it is still common practice to have recourse to the nasal douche. In the majority of cases this is useless and it may seriously injure the epithelium of the nasal mucous membrane. In numerous cases the power of smell was lost in this way, and experiment has shown that no active antiseptic solution is free from danger to the sense of smell. The nasal douche is, also, frequently the cause of distressing headaches, probably accounted for by fluid passing into the sinuses. One of the gravest dangers is that water may reach the middle ear through the Eustachian tube and cause suppurative otitis media. Lichtwitz (Med. Press and Circ., Feb. 9, '98).

DYSENTERY.

Amœbic Form.—Of 35 cases, 4 were under ten years of age; 31 were Americans, 18 being white and 13 colored; 4 were Russian Jews. All contracted the malady in the Southern States, and 30 drank water from surface-wells, which fact may be of etiological importance. Infusoria were found in 6 cases, and amœba in all. Liver-abscess was twice a complication. In studying the amœbæ no evil effect was discoverable from the use of saturated solutions of quinine sulphate or of boric acid. Quinine bisulphate, 1 to 300, and hydrogen dioxide in weak solution soon destroyed the protozoa, as did also tuluidine-blue; the use of this latter stain, preceded by eosin, yielded the best results in studying the structure of the protozoön and differentiating it from the tissues. At the necropsy in one case the appendix was found ulcerated and perforated. The usual microscopical changes were swelling and infiltration of the submucosa, hyaline changes in the connective tissues, and destruction of these tissues, along with the loss of a portion of mucosa and proliferation of the edges of the remaining mucous tissue, with undermining of these edges. Surrounding the abscesses of the liver were seen round, refractive bodies resulting from necrosis of the liver-cells, and resembling amœbæ, together with spindle-shaped bodies of the same origin. No relation between the amœbæ and the beginning ulcers could be traced; the latter seemed to occur before the protozoa secured lodgment in the tissues. Hydrogen dioxide, diluted about five times with water and used as an injection yielded good results in treatment. Harris (Amer. Jour. Med. Sci., April, '98).

DYSENTERY, TROPICAL.

Etiology.—This malady is one of the scourges of war. Among the predisposing causes are errors in diet, fatigue, hardship, and anxiety; persons disposed to malaria and scurvy, and exposed to

sudden changes in temperature by day and by night, are most likely to succumb. During the day the sun is burning hot, and the parched soldier cannot resist the temptation to drink the impure but cold water which the "bhistie" brings him. Even filtration does not render the water innocuous; only boiling insures safety. The most refreshing drink in hot dry climates is beer or wine,—spirits do not have the same recuperating power.

Treatment.—First it is advisable, if possible, to remove the patient from the region where the disease was contracted. Rest of body and mind is essential. The diet should be carefully looked after, preference being given to milk, chicken broth, etc. A mustard plaster may be applied to the abdomen, and castor-oil given, followed by a pill of $^1/_2$ grain of opium; also ipecac; but this is preferably given in 3-grain doses than in the heroic amounts sometimes advocated. An infusion of a native seed known as "*tuphmulunga*" has also proved useful. If the stools are white, frothy, and offensive, mercuric bichloride should be administered. Quinine is also to be recommended, and a warm hip-bath every other day if the griping pains are severe. Surgeon Major Fink (Indian Med. Gaz., Jan., '98).

Since 1891 the conclusion has been arrived at that the treatment of tropical dysentery with ipecac is not wholly satisfactory. At first sulphate of soda (Glauber's salt) was tried, but rejected, as the results were not encouraging. The best method appears to be to put the patient at once on milk diet and give 2 drachms of Epsom salt, combined with 5 minims of aromatic sulphuric acid, every four hours until the flow of bile is well established, as evidenced by the stools; then the mixture should be stopped, and from $^1/_4$ to $^1/_2$ of a pure gall-nut triturated well with water, given every fourth hour. By the second or third day the dysentery is gone and the patient starts his duties again, being restricted to soft food for a day or so. The magnesium sulphate, in the form above given, appears, from its physiological action to be the drug *par excellence* for counteracting the pathology of dysentery, even though the origin of the malady be the amœbæ, as the free flow of bile is the best intestinal disinfectant, and this, aided by the Epsom salt, and depletive action on the intestines and portal system (which these small doses have) gives the necessary antiseptic and antiputrefactive flushing for the polluted tract. If advisable, local applications in the form of counter-irritants or fomentations over the large bowel can be also prescribed, but there is seldom any occasion therefor. The foregoing treatment does not, however, apply to chronic dysentery. Surgeon Captain Johnston (Brit. Med. Jour., April 16, '98).

Drachm-doses of muriate of ammonia every four hours, and a milk-and-arrow-root diet, are to be highly commended in tropical dysentery. Under this treatment, it is a matter of surprise how quickly the blood disappears from the stools—generally on the third and fourth day—and perfect freedom from pain is secured. In severe cases small doses of opium and cannabis Indica dissolved in a little honey, and mixed with a quarter of baël fruit (Bengal quince), are very useful. Attygalls (Brit. Med. Jour., May 7, '98).

EAR, SUPPURATION OF MIDDLE.

Operative Treatment. — A selection must be made between two operations: one that merely involves the mastoid antrum; the other exposing freely the

cavity of the middle ear: the so-called radical operation. The former is indicated in cases of acute suppurative inflammation of the middle ear, which after fourteen days of so-called dry treatment do not show signs of improvement; it is not advisable to wait till dangerous symptoms arise. The radical operation is called for usually in chronic cases, which, in spite of a course of treatment pursued for two months, have not improved. Especially is this true when the subjective disturbances—*e.g.*, headache, tinnitus aurium, dizziness—interfere with the patient's welfare, or when there is continued fever or signs of pyæmia. Müller (Deut. med. Woch., March 31, '98).

ENTERIC FEVER.

Symptoms.—In the course of a case of typhoid fever persistent hæmorrhage from the mucous membrane appeared. The condition resembled hæmophilia, for styptics were unavailing, and the blood showed no tendency to clot. Suddenly, however, clots began to appear in the blood from the mouth, and the hæmorrhage soon stopped. The next morning the typical signs of croupous pneumonia were present. Openchowski (Klin.-Therap. Woch., Jan. 2, '98).

FRACTURE OF ELBOW-JOINT.

Treatment.—The fragments can in no way be so firmly and exactly replaced and held in position as by forcibly flexing the forearm on the arm. The final results, in 30 cases treated by putting the forearm in acute flexion, by careful measurement and comparison with the results obtained by the older methods of treatment, show that the former gives a greater average degree of motion. After the forearm has been placed in position, it is held by a strip of adhesive plaster carried around the wrist and about the upper arm as highly as possible. The weight of the hand may be supported by a narrow sling around the wrist and over the neck, but a full arm-sling is not necessary. Probably early motion increases the amount of deposit and the density of the bands of adhesion, so that the rest of the joint for from four to six weeks is to be recommended. Smith (Jour. of Med. Sci., April, '98).

FRACTURE OF PATELLA.

Treatment.—The methods now employed seem to possess certain disadvantages. A modification of the open method of suture is proposed. The seat of the fracture is laid open by a curved incision with its convexity upward, beginning just below the level of the broken surface of the lower fragment, thence curving upward and crossing the middle of the upper fragment, to end on the opposite side of the joint corresponding with its point of origin. The flap is dissected back in such a way that all the fibrous matter previously uniting the fragments is left attached to the deep surface of the middle of the flap and the remains of the patellar bursa. The advantages of this method, are, first, that free access to the parts is gained, with a minimum amount of cutting; and, secondly, that the resulting scar is out of reach of pressure either from kneeling or from the knot of the wire. The fragments are approximated by a stout silver wire introduced subcutaneously. As to the after-treatment, no splint is employed and the patient is encouraged to gently move the joint in bed from the first, massage being employed daily around the joint. Barker (Lancet, Lond., April 2, '98).

FUNIS, SHORT.

A woman in her third pregnancy, attended by a midwife, had been in labor

for eighteen hours and was suffering terrific pain in the abdomen with every convulsive contraction. There was plenty of room in the parturient strait, and forceps were applied. After moderate traction something popped like a gun and the head was easily delivered. Profuse bleeding was arrested by applying forceps to the short stump of the cord. On delivering the placenta the cord was found to be but six and one-half inches long. The partially inverted uterus was reduced by means of a heavy probe wrapped with absorbent cotton. The child survived and did well. Krim (Pediat., Feb., '98).

HERNIA.

Etiology.—Hernias should be divided into two distinct classes, viz.: acute or strangulated, and chronic or reducible. These differ in causation, pathology, course, treatment, and prognosis, and therefore should be considered separately. The acute form is due to interference with the blood-supply, produced by some sudden and violent force from without, and demands immediate surgical interference. The chronic variety will, in most cases, be found to follow intra-abdominal pressure produced by either persistent cough, hæmorrhoids, or stricture. Operation for this last variety is not imperative and should not be undertaken until the actual cause has been removed, for unless this precaution be taken all the so-called radical methods will result in failure. Bishop (N. Y. Med. Jour., April 16, '98).

Treatment.—Taxis.—Forced taxis is apt to prove dangerous. A patient had an omental hernia (scrotal), into the sac of which subsequently a knuckle of gut had slipped and become incarcerated. Under anæsthesia reduction of the hernial contents into the inguinal canal was effected, but rupture of the sac took place, with escape of intestine and omentum into the space between the peritoneum and the transversalis fascia. Strangulation followed, requiring operative intervention, from which the patient did not recover. Bennecke (Berl. klin. Woch., March 21, '98).

Radical Operation. — The hernial sac, having been exposed by division of the tissues constituting the anterior wall of the inguinal canal, is separated throughout its entirety and a small opening made in it. The latter may not be necessary where the contents of the sac are reducible, yet to make sure that there are no adhesions which, if not separated and tied off close to their points of origin, may occasion subsequent trouble, this is done. In addition to separating the sac from the canal it is separated from the circumference of the abdominal aspect of the internal ring. It is now folded up and delivered within the abdomen, and anchored by means of a suture made to traverse the abdominal walls, which is tied down upon the aponeurosis of the external oblique. The remaining part of the operation, that of closing the canal, is a modification of the Bassini and Halsted operations. The cord is held aside and the walls of the canal apposed with interrupted, silver-wire sutures introduced by means of the Reverdin needle. Commencing below, at the lower end of the wound and suturing upward, the aponeurosis, the anterior sheath of the rectus, the rectus, triangular ligaments of the abdominal walls, the conjoined tendon, transversalis fascia, and, finally, Poupart's ligament are transfixed with the needle and the suture placed. The second suture traverses the aponeurosis, conjoined tendon, transversalis fascia, and Poupart's ligament; the third, aponeurosis, the fibres

of the internal oblique, transversalis, transversalis fascia, and Poupart's ligament; the fourth and fifth, as the case may be, the same structures as the third. Before these sutures are tied the edges of the divided aponeurosis are apposed by a continuous, kangaroo-tendon suture, sufficient space being allowed at the upper part of the canal for the exit of the cord. The interrupted, silver-wire sutures are now tied, the cord placed in contact with the aponeurosis, and the skin and the fascia brought together by either a subcuticular, silver-wire suture or interrupted, worm-gut sutures. It will be seen that the foregoing procedure is a modification of the open operations, combining the advantages of that of Macewen. Deaver (Annals of Surgery, April, '98).

IVY POISONING.

Transmission. — It has often been queried whether a person suffering from poisoning could transfer the malady to another. Though such may be unusual, it certainly does, sometimes, happen. Four cases were discovered in literature corroborative of this. In two cases the poison was transmitted without the occurrence of dermatitis in the first person, and one case resulted fatally.

Treatment. — Preferably a soap-and-water bath forms the initial treatment, followed by soothing applications, such as calamin. The destruction of the *Rhus toxicodendron* should be undertaken by and made the duty of boards of health. Frank (Med. Record, April 16, '98).

ORTHOFORM.

This drug is absolutely free from any toxic property, and consequently may be used with perfect freedom. When it comes in contact with sensory nerve-filaments, it has a powerful anæsthetic effect, which persists in some instances for three or four days; on account of this property it is an excellent dressing for burns or painful ulcers. Another important property is its inhibiting effect upon secretion, and in case of carcinomatous ulcers or of transplantation-wounds the dressings remain so dry that they seldom require renewal. Kallenberger (Berliner klin. Woch., March 11, '98).

PNEUMONIA.

Diagnosis. — Nervous symptoms are more frequent in this malady than in typhoid, and from the onset may so dominate that the local lesion is entirely overlooked. For instance, in the case of cerebral pneumonia of children, in which the disease sets in with a convulsion, there is high fever, delirium, great irritability, muscular tremor, and perhaps retraction of the head and neck, and consequently meningitis is usually diagnosed. Cases in which the malady sets in with acute mania: a young man behaved so strangely on a train that he was handed over to the police as a lunatic, and as he had no cough and little fever (though he complained of pain in the side), pneumonia was not recognized for several days. Again, pulmonary features are frequently marked where the patient has delirium tremens, and error is certain to occur unless it is made an invariable rule to examine the chest in these cases. Then, there are cases with toxic features, resembling uræmia; without chill, cough, or pain in the side, the patient may develop fever, a little shortness of breath, and then gradually grow dull, heavy, and within three days there may be a condition of profound toxæmia with low, muttering delirium. In many of these cases the most characteristic symptoms of the disease may be absent,

particularly the cough and rusty sputum; but the physical signs—if they are elicitable—are well marked. Even in the gravest of these cerebral cases the crises and the onset of convalescence may occur in the ordinary way, and the patient may pass from a condition of extreme danger to one of perfect safety. Osler (Maryland Med. Jour., March 12, '98).

YELLOW FEVER.

Pathology. — Albuminuria and the presence of bile in the urine are constant symptoms of yellow fever, appearing about the fourth day in mild and earlier in severe cases. The presence of the malarial hæmatozoön does not preclude the possibility of yellow fever. In solution, 1 to 10, yellow-fever blood does not give any reaction with pure cultures of the typhoid bacillus. Excepting the diminution of hæmoglobin, the blood does not show any marked changes. The most characteristic pathological changes in the organs are: marked steatosis and congestion of liver, kidneys, and heart; marked congestions, erosions, and hæmorrhages of the stomach and intestines; and, usually, absence of lesions in the spleen and lungs; the other tissues present marked icterus and congestion. The bacillus isolated and with which experiments were conducted at the Isolation Hospital, New Orleans, is identical with that reported by Sanarelli as the bacillus icteroides, and the results obtained would seem to justify its consideration as the special cause of yellow fever. Klebs (Jour. Amer. Med. Assoc., April 16, '98).

Monographs Received.

The editor begs to acknowledge, with thanks, the receipt of the following monographs:—

A Case of Successful Removal of a Large Pedunculated Accessory Lobe of the Liver. By Christopher Martin, M.B., F.R.C.S., Birmingham, 1898.——A Case of Rupture of the Liver Successfully Treated by Abdominal Section. By Christopher Martin, M.B., F.R.C.S., Birmingham, 1897.——The Other Kidney in Contemplated Nephrectomy. By George M. Edebohls, A.M., M.D., New York City, 1898.——The Inguinal Operation for Femoral Hernia. By George M. Edebohls, A.M., M.D., New York City, 1897.——Johns Hopkins Hospital Reports. Report in Gynecology. Vol. vii, Nos. 1-2.——Annual Reports, Department of Agriculture. Washington, D. C., 1897.——Medical Report, Society of the Lying-In Hospital of the City of New York, 1897.——The Treatment of Carcinoma of the Stomach. J. M. G. Carter, M.D., Waukegan, Ill.——Treatment of Dropsy. By T. S. Dabney, M.D., New Orleans, 1881.——Treatment of Yellow Fever. T. S. Dabney, M.D., New Orleans, La., 1897.——Some Remarks and Reports Upon Specimens in Abdominal Surgery. By H. O. Walker, M.D., Detroit, Mich., 1898.——Circumcision, with a Description of a Pair of Circumcision Forceps. By Alexander L. Hodgdon, M.D., Baltimore, 1897.——Some Reasons for the Performance of Circumcision on all Male Infants. By Alexander L. Hodgdon, M.D., Baltimore, 1893.——A Glance at Psychiatry and Neurology as it Exists To-day and in the Olden Times. By Alexander L. Hodgdon, M.D., Baltimore, 1897.——Alcoholic Insanity and Excess, with a Reference to the Opium Habit. By Alexander L. Hodgdon, M.D., Baltimore, 1897.——Epilepsy. By Alexander L. Hodgdon, M.D., Baltimore, 1897.——Pre-

putial Reflex Epileptiform Convulsions, with Report of a Case. By Alexander L. Hodgdon, M.D., Baltimore, 1897.——Prevention of Nervous Disorders. Alexander L. Hodgdon, M.D., Baltimore, 1898.——The Surgery of Tuberculosis of the Peritoneum. By Parker Syms, M.D., New York, 1898.——The Essential Rôle of the Pneumogastric Nerves in Yellow Fever as Shown by Experiments, with Remarks. By Adrian Hava, M.D., New Orleans, La., 1898.

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Sajous's Annual and Analytical Cyclopædia of Practical Medicine.

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[End of the Editorial Department of the Monthly Cyclopædia for June, 1898.]

NOTES AND COMMENTS.

THE F. A. DAVIS COMPANY, Publishers. GEO. B. CREVELING, Business Manager.

Webster's International Dictionary stands pre-eminently above all others for scientific accuracy, every-day utility and convenience, and accepted authority. The makers of this dictionary have held steadily to their ideal: the maximum of accurate information compatible with the maximum of practical convenience to the average consulter. For this purpose it is not enough to multiply titles in a vocabulary and to pile up facts. To exclude as well as to include, to sift the chaff from the wheat, is almost the hardest task of the lexicographer.

It is scientific and practical in that it avoids competition as to size of vocabulary, and excludes a multitude of words as having no legitimate standing or as mischievous corruptions of "the well of English undefiled." In arrangement of etymology and definitions it follows the historical order of derivation; the history of a word being the best guide to its correct use. In indicating pronunciation it uses the characters familiar to every reader, not requiring the acquisition of a new and strange alphabet; and it avoids such running into one paragraph of different titles as is liable to cause difficulty and delay to the consulter.

The book has standing and authority wherever the English language is spoken. It is a familiar standard in the mother-country and in all her colonies; the official standard in the English Postal Telegraph Department as well as in the United States Government Printing-office at Washington; and has a large and growing sale in the young empire of Australia.

There are new dictionaries to-day of various degrees of merit. But for its distinctive purposes,— for the combination of accuracy, fullness, clearness, convenience, and authority, in a single book for every-day use by all classes, "get the best" still means "get Webster," which further means get Webster's "International."

The Omaha Exposition of 1898 beats the Centennial Exposition which occurred in Philadelphia in 1876 away out of sight and is next to the World's Fair at Chicago in importance to the whole country. All of the States in the Trans-Mississippi region are interested, and our Eastern friends will enjoy a visit to Omaha during the continuance of the Exposition, from June to October, inclusive.

Buy your excursion-tickets over the Chicago, Milwaukee & St. Paul Railway. An illustrated folder descriptive of the exposition will be sent you on receipt of 2-cent stamp for postage. Address John R. Pott, District Passenger Agent, Williamsport, Pa.

The funniest picture out is "Brought up on a Bottle," a framing copy of which will be sent on receipt of 4 cents in stamps by Frank J. Reed, G. P. A., Monon Route, Chicago.

Now Ready: The second edition of Professor Stucky's "Invalid Dietary" —a complete diet-list in convenient

Notes and Comments (continued).

form for use in gastritis, dyspepsia, gout, tuberculosis, fevers, diabetes, albuminuria, anæmia, or debility, diarrhœa, obesity, and uric-acid diathesis will be mailed on application by the Henry Pharmacal Co., Louisville, Ky.

Sick-room Isolation. — An interesting feature of The Hospital Training-school Exhibit at the International Health Exposition held in New York was the practical demonstration of an effective method of sick-room isolation.

This was shown by covering a doorway with two sheets hung so as to allow free entrance and exit. These sheets kept wet with Platt's chlorides afford a simple and practical means of isolating contagious cases in private houses, as the combination of chlorides employed is a powerful disinfectant and deodorizer, while free from any objectionable feature, being odorless, colorless, and safe.

Where the War-tax is Felt.—Despite the constantly increasing cost of barley, wheat, oats, codliver-oil, quinine, and other commodities, which enter largely into the composition of the Maltine preparations, The Maltine Company have decided to bear the tax of four cents per bottle, which is to be imposed upon their output, themselves. Although this will entail a heavy burden upon them, they deem it the duty of every patriotic citizen to contribute cheerfully and without quibbling such a share of the enormous cost of prosecuting the war as our government may find it necessary to exact.

Wisconsin Farm Lands. — There is a rush now to the choice unoccupied farm-lands along the line of the Chicago, Malwaukee & St. Paul Railway in central Wisconsin. Good quarter-sections can now be had for $7.00 and upward per acre, one-third cash, balance on long time at current rate of interest. For further particulars address W. E. Powell, General Immigration Agent, 410 Old Colony Building, Chicago, Ill.

Medical Properties of Phenalgin. — Phenalgin is a synthetic coal-tar product, which may be chemically described as a compound product of the amido-benzene series ($C_6H_5NH_2$). The ammonia is loosely combined by a special process, the result being that it is liberated in the stomach in a nascent state. The nascent ammonia increases the therapeutic effect of the coal-tar derivative and tends to neutralize and even completely antagonize the depression which usually follows the administration of antipyretic products. It is antipyretic, antimalarial, hypnotic, and, to a marked degree, a vascular stimulant.—The Medical Times and Hospital Gazette, London, England.

Generous samples of phenalgin will be sent to physicians by the sole manufacturers: Etna Chemical Co., 313 West St., New York, U. S. A.

Unguentine for Burns.—In unguentine we have a thoroughly-antiseptic, healing, and restorative dressing, non-toxic, inodorous, and clean. It readily subdues inflammation, and assists in granulation, and was used in the hospital-barracks at Key West, Florida, where the wounded soldiers of the *Maine* were sent for treatment from Havana.

"What a Young Man Ought to Know." —By Sylvanus Stall, D.D. Philadelphia: Vir Publishing Co., Publishers, Price, $1.00. This is a very excellent book and should be in the hands of every

Notes and Comments (continued).

young man. We know of no stronger encomium than that written by Francis E. Clark, D.D., founder of the Young People's Society of Christian Endeavor, and President of the United Society, who says: "I regard Mr. Stall's new book, entitled 'What a Young Man Ought to Know,' as of exceeding value to every youth just entering upon manhood. It is written reverently, but very plainly, and I believe will save a multitude of young men from evils unspeakable. I shall give it to my own son, and commend it to other young men as I have opportunity."

The Living Age has bought the right to use serially Neil Munro's striking story "John Splendid," which is now running in Blackwood's Magazine. It is begun in The Living Age for May 28, and will be published in weekly installments until it is completed. It is Scotch —but not too Scotch; and as W. L. Alden has well said it marks a wide departure from the "kailyard school" of fiction.

To Chicago, Denver, Omaha, and the Northwest.—It should be remembered that the Monon Route, in connection with the C., H. & P. Railway from Cincinnati, offers the best and most convenient line. Four trains daily. Frank J. Reed, G. P. A., Chicago.

The Cosmopolitan.—The principle article in the June issue of The Cosmopolitan is "In Havana Just Before the War," by Frances Courtenay Baylor. Among other special features of this interesting number are "Liquid Air"—the Newest Wonder of Science—By Charles E. Tripler; "Some Previous Expeditions to Tropical Countries," by Gen. A. W. Greely; "Autobiography of Napoleon Bonaparte"; "Transformation of Citizen into Soldier," by Vaughan Kester; "Lovers' Day at a State Camp," by Irving Bacheller; "Bombardment of Zanzibar," by R. Dorsey Mohun; "Gloria Mundi," by Harold Frederic, illustrated by B. West Clinedinst. The illustrations are numerous and interesting.

Steam-fomenter.—With this issue of the JOURNAL the announcement of Baird Bros. & Co., of their "steam-fomenter," appears for the first time, and from the many testimonials which they have received, all speaking in the highest terms, we have no hesitancy in recommending it very strongly to our readers. It is a great invention for the benefit of suffering humanity, and in our opinion no household or physician can afford to be without one. From the many testi-

Notes and Comments (continued).

monials submitted we quote the following from Dr. F. D. Marshall, Chicago, written under date of Mar. 15, '97: "I have used your steam-fomenter and am most highly pleased with it, as it can be used in all cases where either dry or moist heat is indicated. The temperature being so easily maintained, avoids all danger of exposing patient. Giving an even temperature makes the application effective. So simple any child can operate it. In it is the most practical and complete apparatus for applying heat in all cases of sickness, where dry or moist heat and medicated fumes are indicated."

Relief of Paroxysm in Dysmenorrhœa.—

Dysmenorrhœa is both painful and exhausting. The woman who suffers from this disorder looks foward with dread to each return of the menstrual epoch. It is true that many of these cases depend upon organic lesions, which must be corrected before permanent relief can be obtained. There are, however, many other cases which are due to constitutional causes. In any case the first thing to be done is to relieve

Notes and Comments (continued).

the most urgent symptom, viz.: pain. In an article upon this subject in the Public Health Journal Dr. W. R. Inge Dalton very properly lays much stress upon this point. He makes it a rule to relieve pain at once and can afterward study out the cause at his leisure. In various cases he has administered ammonol in 5- to 10-grain doses with much success. It appears to relieve the congestion of the uterus and to stimulate the organ to renewed functional activity.

Maltzyme.—Maltzyme is the pure and unfermented essence of malt extracted and concentrated by an absolutely new process which preserves to a remarkable degree the therapeutic properties of the diastase. These processes are at any time open for investigation for members of the profession. Maltzyme has the advantage of being exceptionally limpid and palatable and is particularly beneficial in wasting diseases of adults or children. In cases where the general health is reduced and the digestion feeble maltzyme with codliver-oil answers an excellent purpose.

Kryofine.—This remedy possesses the valuable properties of being able to reduce temperature and relieve pain. It has, consequently, a wide range of application in the treatment of disease. In febrile affections it not only lowers the temperature, but also prevents it from rising at the time of the day when this is usually expected. In influenza kryofine has given particular satisfaction. It relieves the aching pains which accompany that disease and does not add to the nervous depression. In neuralgia its influence is decidedly beneficial. Kryofine has been used with success in alcoholic polyneuritis.

Notes and Comments (continued).

Wonderland, '98.—This is the title of a very interesting *brochure* written by Olin D. Wheeler and issued in excellent style by the Northern Pacific Railway. The company annually puts forth a book describing and illustrating the wonderfully-rich domain through which it passes and the resources of which it has done so much to develop. Portions of this Northwestern country are still comparatively unsettled, but every year witnesses new settlers and new enterprises. Mr. Wheeler writes instructively of the beauties and advantages of this vast region. Minnesota is full of charming summer resorts and the Yellowstone Park is of national interest and fame. Everyone who reads of this country will wish to take the advice of its title page and "go and see it." The publication will be sent to any address upon the receipt of six cents in stamps by Chas. S. Fee, General Passenger and Ticket Agent., St. Paul, Minn.

Schering's Formalin-sterilizer.—This is a serviceable device by which surgical instruments and dressings are sterilized by formalin produced by the vaporization of paraform pastils. The cabinet has a capacity of a little less than one cubic foot. Only about five minutes are required for the entire vaporization of one paraform pastil of 5 grains placed in the lower cup. The apparatus is intended for the use of physicians, surgeons, and dentists.

Uterotonic (N. B. & Co.).—The uterotonic is a preparation which contains mitchella repens, viburnum prunifolium, piscidia erythrina, hydrastis, cimicifuga, rhamnus purshiana, hyoscyamus, and potassium bromide, with menstruum and aromatics. The preparation has been

Notes and Comments (continued).

found of service in dysmenorrhœa, menorrhagia, endometritis, subinvolution, and pelvic congestions. Uterotonic is also beneficial by increasing the force and diminishing the pains of uterine contractions.

The Doctor's Factotum.—This is an interesting pamphlet issued bimonthly by the Arlington Chemical Company and its associated companies, of Yonkers, N. Y. It contains a mass of information concerning lactopeptine, liquid peptonoids, phosphocaffeine comp., kola cardinette, and borolyptol. These are all good preparations. Borolyptol is an efficient intestinal antiseptic, one of its principal ingredients being formaldehyde. Liquid peptonoids and lactopeptine are too well known to require any words of commendation. In addition to its purely-medical matter, the doctor's factotum contains humorous stories and selected poems relative to the doctor's calling.

An Army and Navy memorandum-book is what you have been wanting. The Northern Pacific has it. It contains cut of the *Maine*, map of Cuba, list of U.· S. and Spanish naval vessels, interior drawings of a battleship, illustrations of U. S. and Spanish ships, glossary of navy and army words, table of distances, commanders of U. S. ships and army corps, list of U. S. regiments and their commanders, and other information very useful and valuable at this time.

The book fits the vest pocket and is up to date.

Send Charles S. Fee, General Passenger Agent, Northern Pacific Railway, St. Paul, Minn., ten cents and the book is yours.

Yellowstone-Park Map.—The Northern Pacific Railway has just issued a new map of Yellowstone Park that should be in demand. It is a relief map in colors, is scientifically made, and is complete in topography and nomenclature. The map is about 22 x 28 inches in size and is printed on heavy paper, thus making it suitable for framing.

The map is specially adapted for school- and class- rooms, and will be mailed in tubes to any address, by Charles S. Fee, General Passenger Agent of the Northern Pacific Railway, St. Paul, Minn., upon receipt of ten cents.

Campho-phenique.—This preparation commends itself to the medical profession for the following reasons: 1. Because it is the result of scientific experimentation by scientific men. 2. Because the tests as to its efficiency as a germicide were conducted in a scientific manner by scientific chemists and bacteriologists. 3. Because the preparation was introduced to the medical profession in a proper, ethical manner, and without exaggerated claims and unprofessional horn-blowing in the journals and newspapers.—A. C. Bernays, A.M., M.D., M.R.C.S.

As the cord comes down it is to be drawn upon from the *placental* side, and if it is over one of the legs it must be released (Fig. 53) and placed in the most favorable position as regards pressure. In rare instances it will be impossible to draw the cord down without making undue traction. If such should prove to be the case, it should be secured by means of two artery-clamps and cut. Of course, if this is done, it will be necessary to hasten the delivery as much as possible.

When the scapulæ appear the arms must be liberated before extraction is continued. Under favorable circumstances, —that is, if the assistant has kept up intelligent pressure on the fundus, or if the cervix was fully dilated previous to the

Fig. 53.—Method of Releasing the Cord.

version, or if the operator has not made traction in too rapid a manner,—the arms will be folded on the chest and their extraction will be easy.

Even in the hands of the best operators and with the best assistants the arms sometimes become unavoidably extended. Although their extraction must be accomplished in as rapid a manner as possible, there is no need of breaking the arm if care is taken.

The arm which is to the rear is usually more easily liberated. To do this the operator seizes the legs with one hand and carries the child's body well upward. This will cause the posterior shoulder to be more readily reached, and will permit more room for the manipulations necessary. Two fingers of

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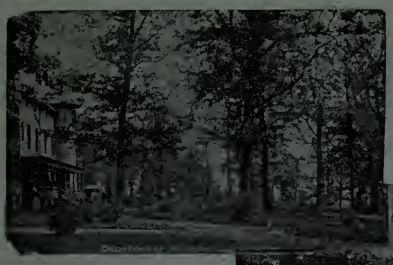

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